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EDITED BY

ALBERT BUSHNELL HART, LL.D.

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EDWIN R. A. SELIGMAN, LL.D.

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LONGMANS, GREEN, AND CO.

American Citizen Series.

Principles of Economics

*WITH SPECIAL REFERENCE
TO AMERICAN CONDITIONS*

BY

EDWIN R. A. SELIGMAN, LL.D.

*McVickar Professor of Political Economy,
Columbia University.*

**AUTHOR OF "ESSAYS IN TAXATION," "THE ECONOMIC INTERPRETATION
OF HISTORY," ETC., ETC.**

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I. General Treatises in English.

OF the older works the treatises of Adam Smith and of some of the so-called Classical School are still indispensable to students. The three founders are :

SMITH, ADAM. *An Inquiry into the Nature and Causes of the Wealth of Nations*. (London, 1776; best modern edition, with introduction, notes, marginal summary and enlarged index by Edwin Cannan, 2 vols., 1904.)

MALTHUS, THOMAS ROBERT. *An Essay on the Principle of Population, or a View of its Past and Present Effects on Human Happiness*. (London, 1798; 8th ed., 1878.)

RICARDO, DAVID. *Principles of Political Economy and Taxation*. (London, 1817.) — This work, together with his other important writings, has been edited by J. R. McCulloch in one volume under the title of *The Works of David Ricardo with a Notice of the Life and Writings of the Author*. (1846; frequently reprinted since.)

The principal modern expounders of the general system set forth by Smith, Malthus and Ricardo are :

MILL, JOHN STUART. *Principles of Political Economy with some of their Applications to Social Philosophy*. (London, 1848; 5th ed., 1880.) — This was the most widely read work from 1850 to 1890.

SENIOR, NASSAU WILLIAM. *Political Economy*. (London, 1850; 6th ed., 1872.) — Acute and original.

CAIRNES, J. E. *Some Leading Principles of Political Economy newly Expounded*. (London, 1874.) — Abstract, but remarkably able.

SIDGWICK, HENRY. *The Principles of Political Economy*. (London, 1883.) — Critical and philosophical, but somewhat remote from actual life.

The reaction against the Classical School was inaugurated in England by

JEVONS, W. STANLEY. *The Theory of Political Economy*. (London, 1871; 3d ed., 1888.) — A work of the first magnitude. The same author's posthumous *Principles of Economics* (London, 1905) is only a torso.

Of modern treatises the best are as follows :

MARSHALL, ALFRED. *Principles of Economics*. (Vol. I, London, 1890; 4th ed., 1898.) — The fullest and most elaborate of recent works.

PIERSON, N. G. *Principles of Economics*. (Translated by A. A. Wotzel. Vol. I, London, 1902.) — Dr. Pierson was formerly Prime Minister of the Netherlands. A virile work, especially strong in the financial sections. Vol. II may be expected soon.

NICHOLSON, J. SHIELD. *Principles of Political Economy*. (3 vols., London, 1893-1901.) — On the lines of Mill, but brought down to date and with much historical material.

PANTALEONI, MAFFEO. *Pure Economics*. (Translated by T. Boston Bruce. London, 1898.) — An acute and profound work on fundamental principles.

FLUX, A. N. *Economic Principles. An Introductory Study*. (London, 1904.) — A solid production on rather conservative lines.

BÖHM-BAWERK, EUGEN VON. *The Positive Theory of Capital*. (Translated by W. Smart. London, 1891.) — Professor Böhm-Bawerk was formerly Austrian Minister of Finance.

WIESER, FRIEDRICH VON. *Natural Value*. (Translated by C. Malloch, London, 1893.) — This book and the one immediately preceding are the two chief works of the Austrian School, whose views are akin to those of Jevons.

Of American treatises the most important are :

WALKER, FRANCIS A. *Political Economy*. (New York, 1883; 3d ed., 1888.) — Until recently the chief American production.

CLARK, JOHN B. *The Distribution of Wealth*. (New York, 1899.)—Although dealing nominally with only a portion of the subject, of fundamental and epoch-making importance.

HADLEY, ARTHUR TWNING. *Economics: An Account of the Relations between Private Property and Public Welfare*. (New York, 1896.)—Admirably written, but with a not entirely satisfactory arrangement.

BULLOCK, CHARLES JESSE. *Introduction to the Study of Economics*. (New York, 1897; new ed., 1900.)—Clear and sensible.

GIDE, CHARLES *Principles of Political Economy*. (Translated by C. W. A. Veditz. New York, 1889; 2d ed., 1904.)—The most widely read European text-book, with additional notes of interest to American students.

ELY, RICHARD T. *Outlines of Economics*. (New York, 1893; new ed., 1904.)—Written in conjunction with H. H. Powers. Popular and interesting.

SEAGER, HENRY ROGERS. *Introduction to Economics*. (New York, 1904.)—Displays a firm grasp of theory and a wide acquaintance with facts. In many respects the most available of existing text-books.

FETTER, FRANK A. *The Principles of Economics*. (New York, 1904.)—Novel and suggestive.

During the past few years a number of series for more popular consumption have appeared. They are not yet completed, and the whole number of volumes is not yet definitely settled. Among these are :

Appleton's Business Series (New York, 1901-1905), with volumes entitled *Modern Industrialism; Funds and their Uses; The Work of Wall Street; Trust Finance; American Railway Transportation; The Modern Bank; The Life Insurance Company; Modern Advertising; Credit; Modern Accounting*.

Methuen's Books on Business (London, 1902-1905), with volumes on *The Money Market; Ports and Docks; Railways; The Stock Exchange; The Business of Insurance; Mining*; and various industries like *The Electrical; The Shipbuilding; The Agricultural; The Brewing; The Automobile Industry*.

Macmillan's Citizen's Library of Economics, Politics and Sociology (New York, 1900-1905), with volumes devoted to *Economic*

Crises; Monopolies and Trusts; Irrigation Institutions; Railway Legislation; Money; Labor Problems; The Economics of Agriculture; The Economics of Distribution; The Evolution of Industrial Society and the like.

The *American Citizen Series* (New York, 1900-1905) includes, besides this volume, books on *Elements of Practical Sociology; Actual Government; Financial History of the United States*; and a volume (announced) on *Problems of Transportation*.

Worthy of mention are two recent works on modern business:

HATFIELD, H. R., ed. *Lectures on Commerce* (Chicago, 1904). For American conditions.

ASHLEY, W. J., ed. *British Industries, a Series of General Reviews for Business Men and Students* (London, 1903). For English conditions.

The more important works on special topics will be found in the References at the head of each chapter.

II. General Treatises in Foreign Languages.

The leading foreign works are :

WAGNER, ADOLF. *Grundlegung der Politischen Oekonomie.* (3 vols., Leipsic; 3d. ed., 1892-1894.) — By the chief advocate of "Professorial Socialism." Erudite, with remarkable bibliographies. A French translation appeared in 1905.

ROSCHER, WILHELM. *Grundlagen der Nationalokonomie. Ein Hand- und Lesebuch.* (5 vols., Stuttgart, 1854-1894; with new editions of the earlier volumes almost every year until his death in 1894.) — By one of the founders of the Historical School. Contains an imposing array of historical notes. The first volume has appeared in English dress in 2 volumes.

COHN, GUSTAV. *Grundlegung der Nationalökonomie. Ein Lehrbuch für Studirende.* (3 vols., Stuttgart, 1885-1898.) — By the best stylist among the German economists. Conservative and interesting. The second volume has been translated into English under the title *The Science of Finance*.

SCHMOLLER, GUSTAV. *Grundriss der allgemeinen Volkswirtschaftslehre.* (2 vols., Leipsic, 1900-1904.) — A remarkable

work by the present leader of the Historical School. Brilliant and fascinating, but weak in the theoretical parts. A French translation was published in 1905.

PHILIPPOVICH, EUGEN VON. *Grundriss der Politischen Oekonomie.* (2 vols., Tübingen, 1894-1899; 5th ed., 1904). — Sane, impartial and concise. In many respects the best German work.

LEROY-BEAULIEU, PAUL. *Traité Théorique et Pratique d'Economie Politique.* (4 vols., Paris, 2d ed., 1896.) — A pellucid work by the chief of the Orthodox School in France.

CAUWÈS, PAUL. *Cours d'Economie Politique contenant avec l'Exposé des Principes l'Analyse des Questions de Législation Economique.* (2 vols., Paris, 3d ed., 1893). — From the standpoint of the Comparative and Legal School.

PARETO, VILFREDO. *Cours d'Economie Politique professé à l'Université de Lausanne.* (2 vols., Lausanne, 1896-1897.) — An acute work, by an Italian, attempting to combine the mathematical point of view with historical details.

III. Periodicals.

Classified by countries the chief periodicals are as follows :

UNITED STATES.

American Economic Association Publications. This Association includes the leading American economists and a large number of prominent laymen. Formed in 1886, its Presidents have been in order : Francis A. Walker, Charles F. Dunbar, John B. Clark, Henry C. Adams, Arthur T. Hadley, Richard T. Ely, Edwin R. A. Seligman and Frank W. Taussig. The publications include the Reports of the Proceedings of the Annual Meetings and a series of independent monographs on every phase of economics. Up to 1897 these were published at bi-monthly intervals, and were collected in eleven volumes. In 1897 a series of shorter Studies was inaugurated, and larger volumes were occasionally published under the name of New Series. In 1901 the Studies were discontinued, and a Third Series of more elaborate monographs was commenced, published at quarterly intervals and still in progress. The agents for the publications have for several years been the Macmillan Co., New York.

- The Quarterly Journal of Economics.* Published for Harvard University. (Boston, 1886-.)
- Political Science Quarterly.* Edited by the Faculty of Political Science of Columbia University. (New York, 1886-.)
- The Annals of the American Academy of Political and Social Science.* (Bi-monthly, Philadelphia, 1890-.)
- The Yale Review. A Quarterly Journal for the Scientific Discussion of Economic, Political and Social Questions.* (New Haven, 1892-.)
- The Journal of Political Economy.* Published for the University of Chicago. (Quarterly, Chicago, 1892-.)
- The American Journal of Sociology.* (Bi-monthly, Chicago, 1896-.)
- The International Socialist Review.* (Monthly, Chicago, 1901-.)
- American Historical Association Papers.* (New York, 1886-1891.) *Annual Report.* (Washington, 1892-.)
- Quarterly Publications of the American Statistical Association.* (Boston, 1888-.)
- Journal of Social Science.* (Boston, 1869-.) Containing the Transactions of the American Social Science Association.
- Sound Currency.* (7 vols., New York, 1895-1902.) Edited by the Reform Club Sound Currency Committee.
- Municipal Affairs.* (6 vols., New York, 1897-1903.) Edited by the Reform Club Committee on City Affairs.
- Johns Hopkins University Studies in Historical and Political Science.* (Baltimore, 1883-.) One volume a year, composed of twelve numbers. 23 vols. and several extra volumes to 1905.)
- Columbia University Studies in History, Economics and Public Law.* Edited by the Faculty of Political Science. (New York, 1891-.) Several volumes a year, each consisting of from one to four monographs. 24 vols. to 1905.)
- Michigan Political Science Association Publications.* (Ann Arbor. 6 vols. to 1905.)
- University of Wisconsin Bulletin. Economics and Political Science Series.* (Vol. I, 1904.)

Economic articles of more or less permanent interest are also found in the monthlies like the *North American Review*, *Forum*, *American Monthly Review of Reviews*, *Atlantic Monthly*, and in the weeklies like the *Nation*, *Outlook*, *Independent*, *Charities Review*. The special periodicals and publications devoted to particular economic interests are too numerous to mention. Some of them will be found below under Section VI, Semi-Official Publications.

GREAT BRITAIN.

The Economic Journal. (Quarterly, London, 1890-.) The Journal of the British Economic Association, since 1903 called The Royal Economic Society.

The Economic Review. (Oxford, 1891-.) Published quarterly for the Oxford University Branch of the Christian Social Union.

Journal of the Royal Statistical Society. (Quarterly, London, 1837-.)

The monthlies like the *Contemporary Review*, *Fortnightly Review*, *National Review*, *Nineteenth Century*, *Independent Review*; and the *British Quarterly* and *Edinburgh Reviews* generally contain some articles of economic interest. The most important weekly devoted entirely to current economic topics is *The Economist*.

GERMANY.

Jahrbücher für Nationalökonomie und Statistik. (Monthly, Jena, 1863.) Edited by Conrad.

Jahrbuch für Gesetzgebung, Verwaltung und Volkswirthschaft. (Quarterly, Leipsic, 1877.) Edited by Schmoller.

Zeitschrift für die gesammte Staatswissenschaft. (Quarterly, Tübingen, 1844.) Edited by Bücher.

Archiv für Sociale Gesetzgebung und Statistik. (Quarterly, Berlin, 1888-.) Edited by Braun.

Archiv für Sozialwissenschaft und Sozialpolitik. (Quarterly, Tübingen, 1904-.) Edited by Sombart and Weber.

Zeitschrift für Sozialwissenschaft. (Quarterly, Berlin, 1898-.) Edited by Wolf.

- Vierteljahrsschrift für Sozial- und Wirtschaftsgeschichte.* (Quarterly, 1904-.) Edited by Bauer, Below, and Hartmann.
- Zeitschrift für die gesammte Versicherungswissenschaft.* (1900-.)
- Finanz-Archiv.* (Quarterly, Stuttgart, 1884-.) Edited by Schanz.
- Archiv für Eisenbahnwesen.* (Monthly, Berlin, 1875-.) Edited by Von der Leyen.
- Zeitschrift für Kolonialpolitik, Kolonialrecht und Kolonialwirtschaft.* (1899-.)
- Thünen Archiv.* (Jena, 1905-.) Edited by Ehrenberg.
- Die neue Zeit.* (Monthly, Stuttgart, 1883-.) Edited by Kautsky.
- Documente des Sozialismus.* (Monthly, Stuttgart, 1901-.) Edited by Bernstein.
- Marx Studien.* (1905-.)
- Publications of the *Verein für Sozialpolitik.* (Several volumes a year, Leipsic, 1873-.)
- Staats- und sozialwissenschaftliche Forschungen.* (Leipsic, 1878-.) Edited by Schmoller.
- Sammlung nationalökonomischer und statistischer Abhandlungen des staatswissenschaftlichen Seminars zu Halle.* (Jena, 1877-.) Edited by Conrad.
- Münchener volkswirtschaftliche Studien.* (Stuttgart, 1893-.) Edited by Brentano and Lotz.

FRANCE.

- Journal des Economistes.* (Monthly, Paris, 1843-.) Edited by Molinari.
- Revue d'Economie Politique.* (Monthly, Paris, 1887-.) Edited by Cauwès, Gide, and Martin.
- Reforme Sociale.* (Paris, 1880-.) Bulletin of the Société d'Économie Sociale.
- Bulletin de Statistique et de Législation comparée.* (Monthly, Paris, 1877-.)
- Revue Internationale de Sociologie.* (Monthly, Paris, 1893-.) Edited by Worms.

Musée Social. Annales. (Monthly, Paris, 1896-.)

L'Economiste Français. (Weekly, Paris.)

ITALY.

Giornale degli Economisti. (Monthly, Padova, 1875-1878 and again Bologna and Rome, 1886-.) Edited by Montemartini.

Bulletin de l'Institut International de Statistique. (Yearly, Rome, 1886-.) Edited by Bodio.

BELGIUM.

Revue Économique Internationale. (Bi-Monthly, Brussels, 1904-.)

AUSTRIA.

Zeitschrift für Volkswirtschaft, Socialpolitik und Verwaltung. (Quarterly, Vienna, 1892-.) Edited by Böhm-Bawerk, Philipovich, and others.

IV. Dictionaries and Cyclopédias of Economics.

PALGRAVE, R. H. INGLIS, ed. *Dictionary of Political Economy.* (3 vols., London, 1894-1899.) — An admirable work, but not devoting special attention to American conditions.

BLISS, WILLIAM D. P., ed. *The Encyclopedia of Social Reform including Political Economy, Political Science, Sociology and Statistics.* (New York, 1897.) — Not profound nor always trustworthy.

LALOR, JOHN J., ed. *Cyclopedia of Political Science, Political Economy and United States History.* (Chicago, 3 vols., 1882.) — Inadequate for economics and now somewhat out of date.

CONRAD, ELSTER, LEXIS and LOENING, eds. *Handwörterbuch der Staatswissenschaften.* (6 vols., Jena, 1890-1894, 2d ed., 1898-1901.) — The most complete and elaborate cyclopaedia of economics in existence.

ELSTER, LUDWIG, ed. *Wörterbuch der Volkswirtschaft* (2 vols., Jena, 1898.) — Of more importance to continental students.

SCHÖNBERG, GUSTAV. *Handbuch der Politischen Oekonomie.* (3 vols., Tübingen, 1882; 4th ed., 1896-1898.) — Comprises a series of thorough and valuable monographs by the leading German specialists.

SAY, LÉON, and CHAILLEY, JOSEPH, eds. *Nouveau Dictionnaire d'Économie Politique.* (2 vols., Paris, 1891-1892.)—Inferior to both Palgrave and Conrad.

V. Government Documents.

A. LOCAL AND STATE PUBLICATIONS.

A large amount of material on economic topics is published by the various American governments,—local, state and national. The municipal governments of the chief American cities publish annually reports of their various city departments. Among them, of economic interest, are the reports dealing with city finances, water, gas and electricity, charities, housing, transportation and the like. Few of the reports reach the high level exemplified by the New York *Report of the Tenement House Department* for 1904, or the Cleveland *Report of the Water Works Division of the Board of Public Service* for 1903. The state governments publish the reports of labor bureaus. Of these, the best are those of New York and Massachusetts, but New Jersey, Pennsylvania, Illinois and a few others issue fairly good reports. The annual reports of the *New York Department of Labor* appear in three volumes, containing (1) the *General Report of the Commissioner* and the *Report of the Bureau of Mediation and Arbitration*, (2) the *Report of the Bureau of Labor Statistics*, and (3) the *Report of the Bureau of Factory Inspection*. Occasionally special reports are published, as on *Labor Legislation*, *Employers' Liability*, *Welfare Institutions*, etc.

The reports of the Massachusetts *Bureau of Statistics of Labor* comprise the *Annual Report on the Statistics of Labor*, the *Annual Report on the Statistics of Manufactures* and various *Special Reports*.

Both New York and Massachusetts also publish periodical bulletins, the *Labor Bulletin* of Massachusetts appearing every two months, the *Department of Labor Bulletin* of New York appearing quarterly. The reports of the other states are not so valuable or voluminous, but often contain matter of im-

portance. An *Analysis and Index* of all Reports issued by State Bureaus of *Labor Statistics* was published by the National Department of Labor in 1893, and has since then been brought down to date from time to time. The separate states publish in turn the annual proceedings of the *National Convention of Chiefs and Commissioners of the various Bureaus of Statistics of Labor in the United States*, as well as of the *International Association of Factory Inspectors of North America*.

The state governments also publish regularly the *State Treasurers' and Comptrollers' Reports*, *Reports of Railroad Commissions*, *Reports of Bank and Insurance Examiners*, *Reports on Taxation*, *Reports of Inspectors of Food and Animals*, *Reports of Boards of Charities and Correction*, *Reports on Prison Labor*, *Reports on Mining Statistics*, *Reports of State Agricultural Experiment Statistics*, *Health Reports* and the like. A few also publish at regular intervals a *State Census*: the best is that of Massachusetts.

Some of the states publish occasional reports of legislative or special committees. Of these the most common are the *Reports on Taxation*. A complete list of these will be found in the chapter on "Recent State Reports on Taxation" in *Essays in Taxation* by the author of this volume. Deserving of mention on other topics are the Massachusetts *Report on the Subject of the Unemployed* (1895); *Report of Special Committee to investigate the Relations between Cities and Towns and Street Railway Companies* (1901); *Report of the Committee on Corporation Laws* (1903); and the New York Report of the *Tenement House Committee* of 1894, the *Tenement House Committee* of 1901; the *Joint Committee on Trusts*, 1897; and the *Committee on Canals* (2 vols., 1899).

Practically the only general guides to the legislation discussed in these reports are the exceedingly valuable *Annual Comparative Summary and Index of State Legislation* and the *Annual Review of Legislation*, both published by the New York State Library under the editorship of R. H. Whitten. These cover the entire country and contain an accurate and well-digested survey of the whole field of state legislation.

B. NATIONAL DEPARTMENTAL PUBLICATIONS.

The publications of the national government are of three kinds: regular departmental issues, special departmental reports and reports of congressional committees.

THE DEPARTMENT OF COMMERCE AND LABOR, organized in 1903, now publishes by far the largest mass of material of interest to students of economics. In addition to numerous new duties, it has taken over much work previously devolving upon other departments. For details see the *Organization and Law of the Department of Commerce and Labor* (1904, 716 pages, with full histories). The chief bureaus, so transferred, which publish economic material, are the Census Office from the Department of the Interior, the Bureau of Immigration and the Bureau of Statistics from the Treasury Department, the Bureau of Foreign Commerce (now consolidated with the Bureau of Statistics) from the State Department, the Bureau of Fisheries formerly known as the Fish Commission, and the Bureau of Labor, formerly known as the Department of Labor.

The Department publishes annually the *Report of the Secretary*. The other publications are issued by the separate bureaus or divisions as follows:

i. THE CENSUS. Until 1900 this was published every ten years. The three most recent issues are *The Tenth Census* (1880, in 24 vols.), *The Eleventh Census* (1890, in 28 vols.), and *The Twelfth Census* (1900, in 16 vols.). The permanent *Census Bureau*, organized in 1902, publishes every year the *Report of the Director* and a number of Bulletins. The most important of those that have appeared from 1902 to 1905 are *Discussions of Population* (Nos. 1, 4, 7, 13, 14 and 15), *Cotton Crops* (Nos. 2, 10 and 19), *Irrigation* (No. 16), *Telephones and Telegraphs* (No. 17). The Bureau has also begun the publication of a series of comprehensive reports, of which two have appeared in 1905, *Mines and Quarries*, 1902, and *Street and Electric Railways*, 1902. It has also published the *Philippine Census* (4 vols., 1905). Several other elaborate investigations as well as the *Manufacturing Census* of 1905 are in progress.

2. THE BUREAU OF STATISTICS divides its publications into two groups.

Group I. is called *Foreign Commerce of the United States*. It comprises (a) the annual quarto *Report on the Foreign Commerce and Navigation of the United States* in two bulky volumes, also including much detailed information on internal commerce and general economic conditions ; (b) the annual octavo *Statistical Abstract of the United States*, a valuable condensed compilation ; (c) a monthly quarto *Summary of Commerce and Finance of the United States*, often containing monographs on special topics ; among which may be mentioned (1903-1905) those on *Colonial Administration*, *Modern Tariff Systems*, *Wholesale Prices in Great Britain and the United States*, *Reciprocity Treaties*, *Great Canals of the World*, and *Statistical Abstract of the World* ; (d) a monthly *Summary of Internal Commerce* ; and (e) occasional reports on special topics of domestic importance, like the *Report on Lake Commerce* (by Tunnell, 1895), various Reports on *Wool and Manufactures of Wool* (1887, 1888, 1894), the Report on the *Warehousing Industry* in the United States (1904).

Group II is called *Consular Reports*. Up to July, 1903, these were issued by the Bureau of Foreign Commerce of the State Department. They now comprise (a) *Commercial Relations*, or the annual reports of consular officers on economic topics ; (b) *Review of World's Commerce*, a summary of the above ; (c) the monthly *Consular Reports*, being miscellaneous reports from diplomatic and consular officers; (d) a daily Bulletin, designed especially for the newspapers but also widely used by business men, known as *Daily Consular and Trade Reports*, containing reports from the consular officers as well as information from special agents and private investigators ; (e) a semi-weekly *Statement of Commercial Information* ; and (f) *Special Consular Reports*, made in pursuance to special instructions. Among the 35 volumes of such special reports issued in 1890-1905 the most important are those on *Mortgages*; *Gas*; *Coal*; *Textiles*; *Sheep and Wool*; *India Rubber*; *Tariffs*; *Trusts and Trade Combinations*; *Streets and Highways*;

Steamship Subsidies; Fruit Culture; Trade Guilds; Commercial Travellers; Merchant Marines; Money and Prices; Industrial Education; Windmills and Storage Warehouses; all of them treating of conditions abroad.

3. THE BUREAU OF LABOR publishes since 1866 an annual report and since 1889 special reports. The nineteen annual reports are as follows:

- First Annual Report: Industrial Depressions. (1886.)*
Second Annual Report: Convict Labor. (1887.)
Third Annual Report: Strikes and Lockouts. (1888.)
Fourth Annual Report: Workingmen in Large Cities. (1889.)
Fifth Annual Report: Railroad Labor. (1890.)
Sixth Annual Report: Cost of Production, Iron, Steel, Coal, etc. (1891.)
Seventh Annual Report: Cost of Production, the Textiles and Glass. (2 vols., 1892.)
Eighth Annual Report: Industrial Education. (1893.)
Ninth Annual Report: Building and Loan Associations. (1894)
Tenth Annual Report: Strikes and Lockouts. (2 vols., 1894.)
Eleventh Annual Report: Work and Wages of Men, Women and Children. (1897.)
Twelfth Annual Report: Economic Aspects of the Liquor Problem. (1898.)
Thirteenth Annual Report: Hand and Machine Labor. (2 vols., 1899.)
Fourteenth Annual Report: Water, Gas and Electric Light Plants under Private and Municipal Ownership. (1900.)
Fifteenth Annual Report: Wages in Commercial Countries. (2 vols., 1900.)
Sixteenth Annual Report: Strikes and Lockouts (1881 to 1900). (1901.)
Seventeenth Annual Report: Trade and Technical Education. (1902.)
Eighteenth Annual Report: Cost of Living and Retail Prices of Food. 1903. (1904.)
Nineteenth Annual Report: Wages and Hours of Labor. (1905.)

The eleven special reports are as follows:

First Special Report: Marriage and Divorce in the United States. (1889.)

Second Special Report: Labor Laws of some States. (1892; 2d ed., 1896.)

Third Special Report: Analysis and Index of all Reports issued by Bureaus of Labor Statistics in the United States. (1893.)

Fourth Special Report: Compulsory Insurance in Germany. (1893.)

Fifth Special Report: The Gothenburg System of Liquor Traffic. (1893.)

Sixth Special Report: The Phosphate Industry of the United States. (1893.)

Seventh Special Report: The Slums of Baltimore, Chicago, New York and Philadelphia. (1894.)

Eighth Special Report: The Housing of the Working People. (1895.)

Ninth Special Report: The Italians in Chicago. (1897.)

Tenth Special Report: Labor Laws of the United States. (1904.)

Eleventh Special Report: Restriction of Output. (1905.)

The Bureau also publishes a bi-monthly *Bulletin of the Bureau of Labor*, with valuable original articles, a survey of foreign statistical labor publications, the decisions of the courts affecting labor, and all new labor laws of the separate states.

4. THE BUREAU OF MANUFACTURES, now (1905) being organized, publishes annually the *Report of the Director*. The reports are also expected to contain information derived from abroad through the consular officers. This information is transmitted to the Department of Commerce and Labor from the Department of State through the newly organized *Bureau of Trade Relations*.

5. THE BUREAU OF CORPORATIONS publishes since 1904 the annual *Report of the Commissioner of Corporations*. It has also published (1905) a special *Report on the Beef Industry*, and has in preparation a volume on "Anti-Trust" Legislation as well as a number of other important reports.

6. THE BUREAU OF IMMIGRATION publishes since 1892 the annual *Report of the Commissioner-General of Immigration* with a wealth of detail and elaborate colored maps.

7. THE BUREAU OF FISHERIES publishes since 1871 Bulletins and Reports on the *Fisheries*.

THE TREASURY DEPARTMENT issues the *Annual Report of the Secretary of the Treasury*, which contains a survey of the Finances, and includes the *Reports of the Treasurer*, the *Register of the Treasury*, the *Director of the Mint*, the *Comptroller of the Currency*, and the *Commissioner of the Internal Revenue*. These reports are also published separately, the last three in enlarged form and with voluminous tables.

THE DIRECTOR OF THE MINT publishes annually a separate *Report upon the Production of the Precious Metals* in the United States, a substantial part of which deals with the output of gold and silver in foreign countries. These statistics are of international reputation.

THE DEPARTMENT OF AGRICULTURE publishes the annual *Report of the Secretary*, the *Yearbook of the Department*, with many original articles and a great variety of documents separately issued by the various bureaus. Of these the most important are the BUREAU OF ANIMAL INDUSTRY; the BUREAU OF PLANT INDUSTRY, with separate divisions publishing *Vegetable Pathology and Physiology Bulletins*, *Botany Bulletins*, *Agrostology Bulletins*, and *Pomology Bulletins*; the FOREST SERVICE; the BUREAU OF CHEMISTRY; the BUREAU OF SOILS; the BUREAU OF ENTOMOLOGY; the BIOLOGICAL SURVEY; the BUREAU OF STATISTICS; the OFFICE OF EXPERIMENT STATIONS, which publishes the *Experimental Station Record* as well as a separate *Annual Report*, and also issues the *Agricultural College Bulletins*; and the OFFICE OF PUBLIC ROADS INQUIRIES. Numerous reports are issued by the BUREAU OF STATISTICS in its three sections: (a) the DIVISION OF DOMESTIC CROP REPORTS (which publishes the monthly *Crop Reporter*), (b) the DIVISION OF FOREIGN MARKETS and (c) the MISCELLANEOUS DIVISION, which publishes statistics on rural economics. The Department also publishes the *Proceedings of the Annual*

Meeting of the American Association of Farmers' Institute Workers, and many voluminous *Special Reports*, some of the most important of recent years being *The Cotton Plant, Useful Fiber Plants of the World; Beet Sugar; and Co-operative Credit Associations Abroad*. In 1904 there were issued 972 publications in over twelve million copies, about half of them being *Farmers' Bulletins*. The DIVISION OF PUBLICATIONS publishes a *Monthly List of Publications*, which forms a convenient bibliography of the Department issues.

THE DEPARTMENT OF THE INTERIOR publishes annually the *Report of the Secretary*, containing among others the reports of the GENERAL LAND OFFICE, INDIAN AFFAIRS, PENSIONS, PATENT OFFICE, the GEOLOGICAL SURVEY, the TERRITORIES, the NATIONAL PARKS and the ELEEMOSYNARY INSTITUTIONS. The *Decisions in Land Cases* usually appear in two volumes a year, and the *Decisions in Patent Cases* in one volume every two years. The GEOLOGICAL SURVEY publishes its annual *Reports* separately in several volumes, and a large number of *Bulletins*, *Monographs* and *Professional Papers*. It also publishes since 1882 the *Mineral Resources of the United States*, and since 1888 the *Irrigation Survey of the United States*. The Commissioner of Patents publishes the *Patent Office Gazette; Indexes to Patents*; etc.

THE INTERSTATE COMMERCE COMMISSION (not subordinate to any of the nine executive departments) publishes since 1887 the annual *Report of the Commission*. A separate volume prepared by the Statistician to the Commission is the annual *Report of the Statistics of Railways in the United States*. The cases themselves are published as *Decisions of the Interstate Commerce Commission of the United States*, reported by the Commission. The Commission also issues annually the *Proceedings of the Annual Convention of State Railway Commissioners*. The Commission published in 1903 a monumental work in five quarto volumes, entitled *Railways in the United States in 1902; a Twenty-two-Year Review of Railway Operations; a Forty-Year Review of Changes in Freight Tariffs; a Fifteen-Year Review of Federal Railway Regulation; a Twelve-Year Review of State*

Railway Regulation ; and a Twelve Year Review of State Railway Taxation.

THE POST-OFFICE DEPARTMENT publishes the annual *Report of the Postmaster-General*. This is the bulkiest of the departmental reports.

THE WAR DEPARTMENT deals with economic topics through the recently erected BUREAU OF INSULAR AFFAIRS, dealing especially with the Philippines and Porto Rico. The chief of the Insular Bureau issues his *Annual Report* and a great variety of other documents.

THE NAVY DEPARTMENT deals in the annual *Report of the Secretary* with the subject of the Commercial Marine.

THE SMITHSONIAN INSTITUTE publishes many annual reports, of which the one of chief interest to economists is the *Report of the Bureau of Ethnology* in one or more sumptuous quarto volumes.

THE INTERNATIONAL BUREAU OF THE AMERICAN REPUBLICS publishes since 1891 an annual *Report of the Director*, since 1893 a monthly *Bulletin of the Bureau* and a large number of Reports, Handbooks, Bibliographical Bulletins, Maps, Law Manuals, and Special Commercial Bulletins, many of them also in Spanish and Portuguese.

For a clear account of the various branches of the Administration, see FAIRLIE, J. A. *The National Administration of the United States of America.* (1905.)

C. CONGRESSIONAL DOCUMENTS.

Among the numberless Congressional Documents of recent years may be mentioned as of special interest to the students of economics :

Reports of the International Monetary Conference of 1878, 1881, and 1892 ; of the India Currency Commission, 1892 ; of the Berlin Silver Commission, 1894.

Senate (Aldrich) Committee, *Report on Wholesale Prices, Wages and Transportation.* (4 vols., 1893.)

United States Strike Commission, *Report on the Chicago Strike of 1894.* (1895.)

- (Senate) Committee on Education and Labor, *Report on the Eight Hour Law.* (1898.)
- Anthracite Coal Strike Commission, *Report on the Anthracite Coal Strike of 1902.* (1903.)
- (Senate) Committee, *Report on Labor Disturbances in Colorado, 1880-1904.* (1904.)
- Tariff Commission, *Report.* (1882.)
- (House) Committee on Ways and Means, *Tariff Hearings.* (2 vols., 1892.)
- Joint Select Committee of Congress, *Report on Alcohol in the Manufactures and Arts.* (1897.)
- (Senate) Merchant Marine Commission, *Report.* (1905.)
- International American Conference, *Report.* (1890.)
- (Senate) *Reports on Interstate Commerce.* (2 vols., 1886.)
- Commission to Investigate the Postal Service, *Report on Railway Mail Pay.* (2 vols., 1901.)
- (Senate) Committee on Interstate Commerce, *Hearings on Regulation of Railway Rates.* (5 vols., 1905.)
- (Senate) Committee, *Information on Postal Telegraph and Telephone Lines, Postal Savings Banks, Government Life Annuities and Provisions for Old Age in Foreign Countries.* (1898.)
- DONALDSON, T. *Report on The Public Domain.* (1884.)
- Public Lands Commission, *Preliminary and Second Reports.* (1905.)

Far and away the most valuable report of recent years is that of the Industrial Commission appointed by the Senate and the House, and published under the simple title of *Report of the Industrial Commission* (19 vols., 1900-1902). The list of volumes is as follows : I. *Trusts and Industrial Combinations*; II. *Trust and Corporation Laws*; III. *Prison Labor*; IV. *Transportation*; V. *Labor Legislation*; VI. *Distribution of Farm Products*; VII. *Capital and Labor in Manufactures and in General Business*; VIII. *Chicago Labor Disputes*; IX. *Transportation*; X. *Agriculture and Agricultural Labor*; XI. *Agriculture and Taxation*; XII. *Capital and Labor in the*

Mining Industries; XIII. *Trusts and Industrial Combinations*; XIV. *Capital and Labor in Manufactures and General Business*; XV. *Immigration and Education*; XVI. *Foreign Labor Legislation*; XVII. *Labor Organization, Labor Disputes and Arbitrations*; XVIII. *Industrial Combinations in Europe*; XIX. *Final Report*. For the wealth of material, and the ability with which the results are presented, this huge report is unique in the annals of the government publications. The final volume gives an admirable survey of the present economic condition of the United States.

The American governments are exceedingly liberal in the distribution of documents. All local and state reports can usually be had for the asking; but as the supply is limited, it is well not to delay. As to the documents of the national government, the House and Senate publications can be obtained by application to one's Representative or Senator; the departmental publications by application to the respective departments. There is now also a *Superintendent of Documents*, who is authorized by law to sell surplus documents in his charge at cost of printing from the plates. He publishes a monthly *Price List of United States Public Documents for Sale*. In a few cases, however, documents are sold by other parties. Thus the *Congressional Record* is sold by the Chief Clerk of the Government Printing Office; the *Bulletins, Handbooks, etc.*, of *American Republics Bureau* are sold by the Director of the Bureau; the *Official Gazette of the Philippine Government*, by the Editor in Manila; etc., etc. Several private firms in Washington and elsewhere make a business of supplying government documents.

D. INDEXES TO GOVERNMENT PERIODICALS.

POORE, BEN PERLEY. *A Descriptive Catalog of the United States Government Publications, 1774-1881.* (1885.) — Not entirely satisfactory.

Catalogue of the Public Documents of Congress and all the Departments of Government from 1893-1896. (4 vols. to 1901.)

Tables of, and Annotated Index to, the Congressional Series of United States Public Documents, 15th to 52d Congress. (1902.)

LUNT, E. C. *Key to the Publications of the United States Census, 1790-1887*; (in American Statistical Association, *Publications*, new Series, I, 1888.) — A carefully classified guide.

LANE, L. P. *Aids in the Use of the United States Government Publications* (in American Statistical Association *Publications*, VII, 1900).

HART, A. B. *Actual Government* (Am. Citizen Series, 1903; rev. ed. 1904.) — Contains at p. xxxiii a list of indexes to government publications.

E. BRITISH OFFICIAL PUBLICATIONS.

In Great Britain the official publications and reports, known as Blue Books, are in some respects more voluminous than in the United States. The chief periodical report is the decennial *Census*. The *Census of 1891* appeared in 7 volumes. The *Census of 1901* is still in process of publication. Most of the annual reports fall under the heads of Finance, Trade and Labor.

FINANCE. Among these, each in a separate volume or volumes, are the *Finance Accounts*; *Financial Estimates*; *Returns showing Revenue and Expenditure*; *National Debt Account*; *National Debt during Sixty Years*; *Consolidated Fund Abstract Accounts*; *Commissioners of Inland Revenue*; *Income Tax Assessments*; *Local Taxation Returns*, *Mint Report*, *Rateable Property Return*; *Savings Bank Returns*, *Commissioners of H. M.'s Customs*.

TRADE. These include Reports on *Trade of the United Kingdom with Foreign Countries and British Possessions*; *Statistical Tables showing Progress of British Trade and Production*; *Merchant Shipping Returns*; *Canals and Navigation Returns*; *Navigation and Shipping Statements*; *Railway Accidents*; *Emigration and Immigration*. Also monthly *Trade and Navigation Accounts* and a *Board of Trade Journal*.

LABOR. These reports, issued by the Labor Department of the Board of Trade, include *Abstract of Labor Statistics*; *Changes in Wages and Hours of Labor*, *Conciliation (Trade Disputes) Act*; *Strikes and Lockouts*; *Trade Unions*; *Directory of Industrial Associations*; *Report of Chief Inspector of Factories and Workshops*; *Chief Registrar of Friendly Societies, Co-operative Contracts, Industrial and Provident Societies*; also a monthly *Board of Trade Labor Gazette*.

Other annual reports are :

Agricultural Returns (Board of Agriculture); Department of Agriculture and Technical Instruction in Ireland; Registrars General of England, Scotland and Ireland, Irish Land Commission, Reports on Mines and Quarries (Home Office); Inspector of Sea and Salmon Fisheries; Geological Survey; Returns relating to Poor Rates and Pauperism; Railway and Canal Commission; Street and Road Tramways; Postmaster-General. There is also a valuable *Statistical Abstract for the United Kingdom*.

Among the recent special Reports of departments and Parliamentary committees and commissions the most important are :

Royal Commission on Agriculture (4 vols., 1896), and *Reports of Assistant Commissioners* (20 vols., 1896); *The Sweating System* (8 vols., 1889); *Commission on Labor* (27 vols., 1894); *Commission on Local Taxation* (9 vols., 1902); *India Currency Committee* (1893 and 1899); *Financial Relations between Great Britain and Ireland* (2 vols., 1896); *Standard Piece and Time Rates* (1893 and 1900); *Wages and Earnings of Agricultural Laborers* (1900 and 1901); *Contracts given out by Public Authorities* (1897); *Wholesale and Retail Prices in 1902* (1903); *Employment of Women and Girls* (1894, 1898, 1899); *Agencies and Methods for Dealing with the Unemployed* (1893 and 1904); and *Tariff Commission Report*, Vol. I, *The Iron Industry* (1904), Vol. II, part 1, *The Cotton Industry* (1905).

The most important reports and papers are summarized and criticised in an admirable quarterly review by Edwin Cannan, appearing in each number of the *Economic Review*. Messrs. P. S. King & Son, of London, publish a convenient *Monthly List of Parliamentary Papers* issued in the preceding month. There is also a *General Catalogue of the Principal Parliamentary Reports and Papers* published during the Nineteenth Century (1801 to 1900), with prices, and in many cases with an analysis of contents.

For Australasia the best conspectus of the economic situation may be found in the annual *Statistical Account of Australia and New Zealand*, by T. A. Coghlan (twelfth issue, 1905), with historical sketches and comparative summaries.

For Canada an excellent summary will be found in the annual *Statistical Year Book of Canada* issued by the Department of Agriculture, and covering the entire economic field.

VI. Semi-Official Publications.

The publications of the American government are supplemented by a great mass of documents, periodicals and reports, issued by private and quasi-public associations. Local trade statistics are found in the *Reports of the Chambers of Commerce* of the principal cities. In New York City the Chamber of Commerce frequently publishes valuable reports on economic topics of state and national significance. Almost every important branch of business has its own Trade Journal, many of which are edited with great ability.

The *Bulletin of the National Association of Wool Manufacturers* is published quarterly since 1864 and often contains articles of scientific merit. The *Annual Reports* of the Iron and Steel Association also deserve mention. In some cases like the Bankers' Association and the Manufacturers' Association annual conventions are held and extended reports issued. The publications of the Labor Organizations and Trades Unions are voluminous. The National Federation of Labor issues a weekly *Bulletin* and a *Report of the Annual Convention*.

The annual reports of some of the great Railway Systems, Insurance Companies and Industrial Corporations can generally be secured without difficulty, and afford interesting side lights on economic development. Associations like the *Free Trade League*; the *Asiatic Association*; the *Irrigation Congress*; the *Sound Money League*; the *Farmers' Alliance*; the *Child Labor Committee*; the *National Live Stock Association*; the *National Good Roads Association*; the *Patrons of Husbandry*; the *National Dairy Association*; the *Stock Breeders' Association*; the *Philadelphia Commercial Museum*; the *National Municipal League*; and many others of more or less permanence, issue fugitive, or periodical reports. Among the most important of such semi-official publications are those of the Merchants' Association of New York and of the National Civic Federation.

The former has issued a number of volumes, among them the remarkable *Inquiry into the Conditions relating to the Water Supply of the City of New York* (1900). The latter publishes annually several volumes dealing with almost every phase of the relation of capital and labor, and treating also the question of taxation. It also publishes a monthly *National Civic Federation Review*. Many important questions of social conditions and legislation are treated in the annual *Proceedings of the National Conference of Charities and Corrections*.

VII. Bibliographies and Finding Lists.

A series of bibliographies has recently been published by the national government, prepared by GRIFFIN, APPLETON PRENTISS CLARK, chief bibliographer of the Library of Congress. They are as follows :

- A List of Books (with references to Periodicals) relating to Railroads.* (72 pp., 1904.)
- A List of Books (with references to Periodicals) on Mercantile Marine Subsidies.* (100 pp., 2d ed., 1903.)
- List of References on Reciprocity.* (38 pp., 1902.)
- A List of Books (with references to Periodicals) relating to Trusts.* (41 pp., 2d ed., 1902.)
- Select List of References on Industrial Arbitration.* (11 pp., 1903.)
- Select List of References on Chinese Immigration.* (31 pp., 1904.)
- A List of Books (with references to Periodicals) on Immigration.* (76 pp., 1904.)
- A List of the more Important Books on Banks and Banking.* (55 pp., 1904.)
- List of References on Federal Control of Commerce and Corporations.* (22 pp., 1904.)
- Select List of References on the British Tariff Movement.* (37 pp., 1904.)

Other good bibliographies on special subjects are :

MAROT, HELEN. *Handbook of Labor Literature.* (1899.)

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The Boston Public Library has published two useful works:

A List of Books on Social Reform in the Public Library of the City of Boston. (1898.)

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A comprehensive annual bibliography is published by the International Institute of Bibliography under the title *Bibliographia Economica Universalis.* It now appears in instalments in the *Revue Économique Internationale.*

The most convenient bibliographies of current works are found under the rubric "Recent Publications upon Economics," published at the end of each issue of *The Quarterly Journal of Economics;* and in a somewhat fuller *Uebersicht über die neuesten Publikationen* in Conrad's *Fahrbücher für Nationalökonomie und Statistik.*

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Principles of Economics.

Principles of Economics.

Part I.

Introduction.

CHAPTER I.

FUNDAMENTAL CONCEPTS.

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2. Economic Life.

The starting-point of all human activity is the existence of wants. To satisfy hunger and thirst, to secure shelter and to provide clothing were the chief aims of primitive man, and constitute even to-day the motor forces of all society. As man develops, his wants grow in number and refinement. However civilized he becomes, his material welfare forms the basis on which the whole larger life is erected. To secure the means of satisfying wants brings into play the economic activity of man. The process may be expressed in the words — wants, efforts,

satisfactions. We start out with the existence of wants, we desire to secure their satisfaction, we can ordinarily accomplish this only through some effort. The economic life of man is concerned with such efforts and their results.

The sum of all one's possessions, including at the time slaves, wife and children, was termed by the Greeks *ecos* (*οἶκος*) ; and the method of managing them was called economics (*οἰκονομική*) — the control or rule (*νομός*) of the household (*οἶκος*). We still speak of the economical man as the one who orders the affairs of his household, who manages his possessions, with prudence and success. In the wider sense, whether he achieves success or not, the economic activity of man looks to a provision of the material means to satisfy his wants and those of his household. The science which deals with these economic activities is called economics or political economy.

Business means etymologically the state of being busy. The fundamental thing about which all men must ordinarily busy themselves is the satisfaction of their wants. To attain first a competence and then a surplus, to provide for one's livelihood and then to secure a profit, is the essence of business activity. Economics might therefore equally well be defined as the science of business activities.

The motive that guides men in their economic life is sometimes described as the economic motive. It may best be defined as the motive which impels every human being to satisfy his wants with the smallest possible effort, or which leads him to secure the most pleasure with the least pain. The existence of such a motive is undeniable ; it is in fact of deep and abiding importance ; it may even be declared the paramount consideration in the working out of economic law. We must, however, not forget that this is not the only influence at work in economic life. Human beings are impelled by other motives as well ; and these other motives may often exert a perceptible influence in economic life. The study of economic history shows us that religious, political and ethical

considerations have profoundly modified economic action itself. In the economic life of a primitive Christian community the economic motive was of very different importance from that of modern industrial life. Even in modern times the economic motive is not equally strong everywhere, or equally free from the admixture of other influences. The Indian ryot is not like the American farmer in his desire to "get ahead." The negro laborer in the South is not so amenable to the economic motive as the stock exchange broker. The salary of a government employee who hopes for official decorations cannot be explained in the same way as the wages of a carpenter. An analysis of all the motives that influence men in their economic life belongs to social psychology, and would disclose widely varying effects at different times and places, as well as in different individuals or classes at the same time or place. In searching for the fundamental laws of economics it is convenient to exclude all motives save the economic, since the latter is the one of basic significance, and since it would otherwise be impossible to formulate economic theory in general terms. In applying the law to actual life, however, we must be careful to study how its operation is modified by the other — even though minor — motives which affect economic action.

If the "economic motive" is thus open to misconception as explaining the whole economic life, the so-called "economic man" is a complete abstraction. By the "economic man" is meant the human being dominated by the economic motive. Such a man, however, does not really exist. Not only do other motives affect the economic life, but side by side with the economic life itself are the aesthetic life, the religious life, the intellectual life and the multiplicity of other human activities. It is indeed the function of economics to study that aspect of human activity known as the economic life. We must, however, not forget that we are studying man in only one phase of his existence. Although there is both an economic and a religious life, there is no economic man, just as there is no separable religious man. The business man has his

family, just as the clergyman has an appetite. The conclusions of economic science, therefore, are provisional, not final, conclusions with reference to the conduct of life in general.

3. Economics or Political Economy?

Civilized man cannot be thought of apart from society. In fact human beings, whether civilized or not, have from the outset lived in some form of social union. Robinson Crusoe is not a type, but an anomaly. Without society man could never have developed. There would be no such thing as speech, morals, law or order. Economic life deals with man as existing in society. Economics is hence a social science.

Economics, however, is not the whole of social science. There are as many divisions of social science as there are important classes of social relations. Jurisprudence deals with the legal relations of society, with certain usages and customs which have received the sanction of precedent and have been crystallized into law. Ethics, or the science of morals, deals with another important group of social relations, for individual standards of conduct can be understood only in their relation to social ethics. Politics treats of the social relations of man looked upon as a member of organized society or the state ; it discusses the connection between the individual and the government. Sociology, or the fundamental social science, deals with society as a whole, and studies certain general principles that lie at the basis of each of the separate social sciences. Economics is one of these separate social sciences. The ethical, the legal, the political and the economic relations of men are all outgrowths of social life ; and what is common to them all falls within the province of sociology.

Why, then, do we speak of political economy? It may be frankly confessed that the term is inexact. In one sense politics, as we have seen, is simply a branch of social science. Politics deals with the state ; but the state is organized society. It is composed of individuals and cannot be conceived as apart from individuals. Yet when we use the term political

science, stress is ordinarily laid on the state; when we speak of social science, the emphasis is put on individuals as members of society. It so happens that when the term political economy was first used by the Greeks, they thought only of the former meaning. Aristotle, after discussing domestic economy, tells us that states also, like individuals, must make both ends meet. There is, he says, a regal economy, or the art of managing the public household in monarchies; there is a provincial economy, best suited to provinces; and finally there is a political economy, best suited to the "polis," or free state. Political economy therefore is to him substantially the art of providing a revenue for the state. When the subject was again discussed at the close of the middle ages, it was seen that the revenue of the state depends upon the revenue of the people, and political economy was now conceived of as the art of making a people wealthy and powerful through national development. It was soon recognized, however, that national progress depends chiefly upon the efforts of the individuals themselves. Thus in more recent times the stress has come to be laid on the causes which condition the economic advance of the various classes of society, and since the emphasis is now put on the social rather than on the political causes, the science which deals with these problems is properly called social economics or, more briefly, economics.

The world, however, is conservative; and the old term political economy, which arose in former centuries when attention was centred on the political side, is still often used. Strictly speaking, we ought to employ the term political economy only when we treat of the political aspect of economic relations, that is, of their direct dependence upon government action. People forget that economic activity is primarily social, and only in part influenced by political considerations. The force of habit makes them say political economy when they really mean social economics or economics proper.

The foregoing explains the reason for dropping the first half of the old term, political economy. The change in the

second half is due to another cause,—the recognition of the scientific character of the study. Many modern sciences end with the suffix “ics,” as physics, politics or mathematics. When the writers of the seventeenth and eighteenth centuries first adopted the Greek phrase, they had in mind the endeavor to augment the wealth or “economy” of the state. Hence the term. The transition from the point of view of an art to that of a science has substituted for the old phrase the newer name — economics, that is, the science that deals with the economy of society and of the individuals of which it is composed.

4. The Meaning of Wealth.

It is evident from what has been said that economic activity is concerned with wealth. In fact economics is often called the science of wealth. But what is wealth?

To the ordinary man wealth is equivalent to money. When we look a little deeper, however, we see that what he means is not money, but money's worth. A man's wealth nowadays consists of anything which can be obtained, or sold, for money. But this is only a secondary meaning. Money is an institution of comparatively recent date; there was wealth before there was money. Nor will it suffice to say that wealth is that for which something else can be procured through exchange. For although there were exchanges in the shape of barter before there was any money, wealth existed even before men exchanged their possessions. The fundamental idea is something deeper. There are really three characteristics.

(1) Originally wealth, as the word implies, denoted weal or well-being. Whatever a man had in abundance constituted his wealth, because it afforded him a surplus. It made him well off. The capacity of anything to satisfy a human desire is called its utility. When we speak of the utility of a thing, however, we do not pass any judgment upon its moral qualities. Whisky and opium may be injurious, yet so far as they satisfy existing wants they possess utility. They are called goods because they are good for the satisfaction of some want, no

matter how reprehensible that want may be. In order for anything to constitute wealth, the first requisite is that it should possess utility, that is, the capacity to satisfy some desire. This, however, does not suffice. Not all desirable things constitute wealth. The conception must be further limited.

(2) The second characteristic of wealth is that it must be something external to man. Personal or internal goods are a contradiction in terms. What is meant is personal or internal qualities which are bound up with the individual himself, like his physical, mental or moral characteristics. Health is not wealth, although it may be the basis of wealth. Man cannot part with these qualities; he can only embody them in some product which will be serviceable to others. His personal qualities may thus enable him to acquire wealth, but they do not themselves constitute wealth. To speak of personal wealth in any but a metaphorical sense, as a wealth of humor or good spirits, is to confuse the fundamental distinction between man and his environment. Wealth exists for man, but man himself is not wealth (unless indeed he is a slave, and then he is wealth, not to himself, but to some one else). Wealth may be produced by man, but it is the product, not the producer, that constitutes wealth. The things that form wealth are always outside of man; they are external, not internal, phenomena.

This does not mean that wealth is necessarily something tangible. It is indeed true that the term "goods" is sometimes preferred to "commodities," because the latter is supposed to imply something tangible. "Commodity," however, really means that which "accommodates" or is "commodious" to us, just as goods are those things that are "good for us," — both in the economic sense. If, however, we use "commodity" to designate some tangible, visible object, wealth is not confined to commodities. Utilities may be conferred not only by inanimate objects but by human services. A concert satisfies a want; what we pay for is not a physical object but a service. A teacher receives a salary; what he gives in return is something intangible. Services in almost every case bring about

some change in man's environment, and in that sense even a service may be classed as something material. But if by material we mean something that has an objective, visible existence, a service must be considered immaterial. It confers utilities, it is external to man, it is to that extent wealth ; but it is not physical, visible, tangible wealth. Yet the higher the civilization, the more numerous will be these forms of impalpable wealth.

In reality, however, the distinction between commodities and services is slighter than would appear at first blush. For in each case we are really dealing with services. The sole use of a commodity is the series of services which it can render. Whether the music which we hear comes from a music-box or from a human voice, whether the boat is propelled by a man or an engine, is of no consequence. What we enjoy in each case is a service. The only difference is that a service disappears in the rendering, while a commodity often remains, and is capable of similar services in future. The service is evanescent, the commodity is often durable. The commodity may then be regarded as the embodiment of a series of stored up services, to be conferred piecemeal. But the distinction is vague. For many commodities, like coal, ice-cream and the like, disappear in the very act of rendering a service. Durability is no criterion of wealth. An ephemeral service may be of far greater importance than a durable commodity. It is the character, not the length or repetition, of the service which we prize. The real relation between a concrete commodity and a service is that the commodity is a crystallized service or a series of services. The essence of wealth is an inflow of satisfactions : utilities consist of services, whether or not they are embodied in physical objects. The very idea of a service, however, implies something that flows in to one from the outside, whether the outside be a man or an object. Wealth is always something external.

(3) The third characteristic of wealth is limitation of supply. A few goods and services exist in such plenty that the satisfac-

tion of our wants is not affected by any consideration of the quantity available. The deprivation of any unit in the supply will make no difference to us. We all need air, for instance, but in ordinary circumstances air is free to all, in unlimited quantities. Such goods are therefore called free goods. The vast majority of commodities, however, are not the free gift of nature. They exist in such limited amounts that we attach importance to definite quantities. If we wish to utilize them, we must be economical. Hence they are called economic goods and form the subject matter of the science of economics.

Putting it in another way, it may be said that while all goods that render a service possess a certain kind of utility, only economic goods, or goods limited in supply, possess that grade of utility which results in value. As we shall see later, value is an estimate of the relative importance or utility of definite quantities of goods. When we speak of the value of a diamond, the word conveys no precise meaning unless we know how large and pure the diamond is. When we say a thing is useful, we do not measure its grade of utility; but when we say a thing is valuable or worth something, we at once ask : how much? In the case of free goods, by which we mean goods the amount of which is unlimited, we attach no importance to any particular quantity, that is, we set no value on it. Wealth might therefore be defined as composed of things that possess value, and economics would then be the science of value.

In what has preceded we have virtually affirmed that wealth means abundance, and at the same time connotes limitation of supply. This seems absurd. The apparent absurdity, however, is removed by the statement that wealth consists of an abundance of things limited in supply. If the supply is limited, man will make an effort to secure them ; the more scarce they are, the more valuable they will be and the more effort he will make. Economic action consists in getting the greatest results with the least effort. Anything which will afford us the same services with less effort will set free surplus energy for

other purposes, and thus increase our wealth. The irrigation tracts in the West represent much effort and much wealth; if water were to become as plentiful there as in the East, the wealth of the country would be increased, because all the efforts devoted to securing water would now be devoted to something else, let us say to building railways. The water would no longer be wealth, just as the air is not wealth, but there would be more wealth than before because there would be a larger total inflow of satisfactions. Before, we had only the water; now we have the water and the railroads.

This also explains the seeming opposition between wealth and value. Wealth is composed of things having value, and yet the more we have of anything, the less its value. This statement overlooks the fact that, as we shall see later (§ 76), value is an expression of the relative importance of goods, while wealth denotes an aggregate of goods possessing value. In the example above, the value of water indeed disappeared, but was replaced by that of railroads, previously not existing. The reduced value of a commodity whose quantity increases may be compensated by the new value of something which did not exist before; but the aggregate of wealth may be augmented. Thus increasing wealth does not mean decreasing value in general, for the lower value of some things is balanced by the higher value of new things. An increase of commodities can never of itself engender a decrease of wealth.

To recapitulate, in order to constitute wealth, a commodity or service must have three qualities. First, it must possess utility: if the thing is of no use, it is not a good at all. Secondly, it must be external to the individual: a man may be skilful or intelligent, but he is not wealthy until he has transmuted his skill into some actual result. Thirdly, it must be limited in amount: if it is free to all, it may make him happy, but its possession will not differentiate him from his neighbor, and he will attach no specific value to it.

Since modern society is based on the interchange of possessions, all this can be summed up in the statement that wealth

is nowadays anything that can be exchanged. If it is not useful, no one will want it ; if it is not external, no one can part with it ; if it is not limited in quantity, no one will give anything for it. Historically and fundamentally, however, wealth is anterior to exchange. Things do not possess value because they are exchanged ; they are exchanged because they possess value.

5. Wealth and Man.

Wealth, then, forms the subject matter of economics. But in what sense ?

If a man chops down a tree for firewood, he is adding to his wealth. Yet a discussion of the best axe to be used would not be an economic discussion. We all need light ; yet a study of the relative merits of gas and electricity would not necessarily be economic in character. We may study wealth from the technical as well as from the economic point of view. The technical study explains the qualities of the thing itself or in relation to other things : economics deals with these qualities only in their relations to man. A study of the relative merits of axes would be technical ; a study of the income derived from tree-felling is economic. (Economics is therefore the science of man in his business relations to wealth.) The emphasis is to be put on the human rather than on the material side of the problem. Since wealth in its economic aspects consists of anything that has commercial value, economics may also be defined as the science of value, in the sense of the science of human relations so far as they are affected by value.

Wealth is at bottom a surplus of satisfactions. We may therefore approach the subject from either side,—that of satisfaction or of want. In other words, in dealing with the goods that constitute wealth we must be mindful not only of their acquisition, but also of their use ; not only of their production, but also of their consumption. In order to grasp the real meaning of wealth, we must ask not only, what have you got ? but, what do you do with it ?

If a savage were to find a watch on the seashore, he might prize it as a trinket. As a watch it would be of no use to him. For watches to have any material value presupposes a society considerably advanced in intelligence. The same commodities may be relatively valueless to one generation and exceedingly valuable to another. At bottom it is demand which sets in motion those forces which result in giving a thing value. The social demand for a thing is due to the uses to which it can be put. But the uses to which it can be put depend not only on the thing to be used but on the individuals who use it. Wealth therefore depends in the last instance on man.

Wealth can be increased only through the multiplication and better utilization of commodities. The more and better the commodities, the wealthier the population as a whole. This multiplication can take place only in obedience to an increased demand. Increased demand, however, means a diversification of wants. People now want more things of different kinds than in the earlier stages of society. The things they want, however, depend in last resort upon their aesthetic, intellectual and moral conditions. The physical appetite of civilized man differs from that of the savage only in its being more refined, — that is, more aesthetic. It differs not in quantity, but in quality. His other appetites also change with the development of civilization. The economic life is therefore ultimately bound up with the whole moral and social life. There is a deeper meaning in Ruskin's statements : "There is no wealth but life," and "Nor can any noble thing be wealth except to a noble person." The economist in studying wealth must continually bear in mind those forces which make civilized human beings ; for, after all, it is not the wealth itself, but the human beings who create and who use the wealth, that are of fundamental importance. What a man does with his wealth is a vital question ; for upon the answer given to this question by society as a whole depends the growth of future wealth itself.

This is equivalent to saying that civilization consists in the attempt to multiply wealth, and to render man more amenable

to those higher forces which will lead him to employ his wealth in the true interests of progress.) The goal of all economic development is to make wealth abundant and to make man more able to use wealth correctly.) (The real object of economics is to explain the process of making wealth cheap, and man dear.) Education, science, art, ethics,—all have an economic side.

6. The Measure of Wealth — Income and Capital.

Americans speak of a man as worth a million dollars; Englishmen would call an equally wealthy man at home worth ten thousand pounds a year. In the United States, land is assessed for taxation at what it will sell for; in England, at what it will rent for. In the one case we estimate wealth by the capital value of property, in the other by the income value. Capital and income are thus here two phases of the same thing. Historically the reason is simple. In the middle ages land was the chief form of wealth, but was rarely bought or sold. Under the feudal system land had no selling value, but only a rental or income value. A man was rich when he had a large rent roll. The custom of measuring wealth by periodical income finally spread to all classes of society, because of the predominant influence of the landed interest. In the American colonies, on the other hand, land was abundant and free from feudal restrictions; it was, therefore, almost from the beginning bought and sold like other commodities which exchanged hands for definite sums. Thus the selling or capital value came to be the measure of wealth in general. Income and capital are therefore two aspects of wealth. In the one case we measure wealth as a flow of services or stream of satisfactions; in the other case as a stock of services or fund of satisfactions.

The income measurement of wealth is the more fundamental psychologically as well as historically. We desire things at bottom because of their utility. They can impart this utility only in the shape of a succession of pleasurable sensations.

These sensations are our true income. Income, in the economic sense, is the inflow of satisfactions from economic goods. When water is free to all, the pleasure of drinking it does not constitute an income, just as little as basking in the sun, which shines on rich and poor alike, is income. When water, however, becomes so scarce that it acquires a value, its use affords in the broadest sense an income.

The original conception of income is therefore pleasure or benefit income. In modern times value has come to be estimated in terms of money, and income is accordingly used in general to denote the inflow or revenue in money,—the money income as opposed to the pleasure or benefit income. If I rent my yacht to another, the return is called income, because the benefit comes in in the shape of money; if I use the yacht myself, the return in the form of satisfaction is not ordinarily called income. Yet they are essentially analogous phenomena; for no one would pay a sum of money for anything unless it afforded him an equivalent amount of satisfaction. Just as concrete articles of wealth existed before there was any exchange, so income existed before there was any money. Amid a society based on money transactions, however, income denotes any inflow of satisfactions which can be parted with for money. It may not be money income, but it must be capable of being transmuted into money income.

As against the income, which is at bottom the service or satisfaction afforded by anything that has value, is to be put capital. When we buy anything we buy the right of securing such a satisfaction or stream of satisfactions, either from repeated services as such, or from the commodity which embodies such services. Every commodity is a store of such satisfactions. A suit furnishes a satisfaction or income every time it is worn, an axe affords an income every time it is used. We may therefore either pay for each service as it is rendered or give a lump sum, which capitalizes this anticipated income or flow of satisfactions. One may rent the dress-suit every night or buy it outright. The process of valuation

through which we assign a capital value to this complex of future income values and through which we transmute the flow of satisfactions into a fund is a subtle one, to be discussed later. The process is taking place about us every moment. Nothing would have any capital value if it had no income value ; capital is capitalized income.

This view of capital has not always been recognized. The earliest use, indeed, of the word *capitale* at the close of the middle ages was to designate the *caput*, or principal sum of money from which a revenue was expected. Yet it has become customary among economists since Adam Smith not only to confine the term capital to wealth used for further production, in contradistinction to wealth devoted to immediate consumption, but also to differentiate capital from land. (Capital would then be defined as that part of wealth which is the result of production devoted to further production. The consequence has been that capital has often been regarded as consisting chiefly of the tools, machinery, factories, ships, cars and finished products of all kinds used to increase production.

This is, however, at variance with business usage. When a wagon builder, for instance, counts his capital, he always includes his real estate. The factory may indeed differ in such important points from the land on which it is built as to justify the erection of a separate category for land, but in one sense they are both classes of capital. Again, he includes in his capital the stock of finished goods, irrespective of whether the wagons are to be used by farmers as tools to garner the crops or by millionaires for pleasure. Finally, he includes things that have not been produced at all, for instance, mere privileges or patent rights granted to him by government. His capital thus comprises things that have never been produced, as well as things that may never be used for further production. Capital in this sense is simply wealth which yields or can yield an income. It includes everything that has a capital value. The wagon is capital to the livery-stable keeper because his business income is derived from renting its use day by day

to customers; the wagon is capital to the farmer because it helps him to get an income from the crop; the wagon is capital to the millionaire because it embodies a series of incomes, which he actually enjoys in kind by riding, or which he could enjoy in money if he chose to let it out piecemeal or to sell it outright. If a broker fails, his creditors will insist on including in the assets or capital not only his stock exchange seat, which is not the result of any production, but his real estate holdings as well. Both have a capital value. Capital as contrasted with income, therefore, is all wealth regarded as a store or fund.

In every progressive society men seek to enlarge their flow of satisfactions. This can normally be done not only by enhancing personal efficiency, but primarily by increasing or improving the items of wealth which embody this flow of income. Economic progress thus normally rests upon the devotion of existing wealth to the further increase of wealth; and the chief function of capital may accordingly without great error be declared to be its productive use. But it must not be overlooked that the end of production is consumption and that at bottom capital is capitalized income.

While income is, therefore, the fundamental test of wealth, it ordinarily makes no difference whether we measure a man's wealth by his income or his capital. Sometimes, however, a difficulty arises. A railway president or trust manager with a salary of fifty thousand dollars a year cannot well be called poor. Yet a system of taxation based on the measurement of wealth by capital, as in the case of the property tax, would exempt him completely. The capital estimate of wealth is here clearly inadequate. On the other hand, the customary restriction of income to money income is also occasionally embarrassing. When capital is so used as not to yield a money income, as in the case of one's yacht or jewels or private park, an income tax would not reach the owner at all. The injustice would be no less than in the preceding case. Some modern tax laws indeed include in taxable income the

annual value of a house inhabited by the owner. But the inclusion of benefit income in the case of a house and its exclusion in the case of a yacht or park are not easy to justify. The really safe measure of wealth, applicable in all cases, is income in the sense of pleasure or benefit income.

7. Wealth, Money and Property.

Whether wealth be measured in terms of capital or of income, it is generally expressed in terms of money. For wealth in modern society is anything that can be exchanged, or that possesses an exchange value, and money is admittedly the universal medium of exchange. Hence wealth is sometimes identified with money.

It is clear, however, that money is simply a commodity, and forms only a part of the entire stock of wealth. It is, indeed, a most important constituent of wealth, but acquires this importance chiefly because it is a representative of other wealth. Very little of a man's wealth consists of money, although it can all be converted into money. Money is significant not for itself but as the universal purchasing medium. In modern society the money needed to carry on the daily business transactions is like the lubricating oil in a machine. Without the oil there would be difficulty in making the machine work ; without the money there would be embarrassment in conducting business. But just as too much oil would be not only useless but harmful, so the existence in a country of more money than is needed for the actual transactions would represent a waste of wealth which might otherwise be employed in production. Money is wealth, but wealth is not money. Wealth is money's worth, but wealth and money are by no means identical.

Finally, we sometimes confuse wealth with property. In reality they are not convertible terms. Property is primarily a legal conception. It denotes the exclusive right of ownership in a definite amount of wealth. A man's property is what is legally his own, whether his own consists of capital or of income, of concrete goods or of mere rights. If a man mort-

gages his farm for half its value, his real wealth in land is reduced one-half; but the title to the land is still his, and in most states, like New York, he pays his property tax on the entire value. But this was not always so. Formerly the mortgagee or lender entered upon the land and enjoyed its fruits; later, he still owned the land legally, but left the mortgagor or borrower in possession; now the land remains the property of the borrower, subject only to the lien of the lender. From the economic point of view the wealth is divided between them; legally the land is the property of one party, as in former centuries it used to be the property of the other. When a man borrows money on mortgage, he is creating a new form of property, but not new wealth. There is no more land than before, but there is an additional property right in the shape of a piece of paper or mortgage which represents the title to a certain income. So the real estate and rolling stock of a railroad constitute the property of the corporation, while the capital stock is the property of the stockholder. They form different kinds of property and can be sold separately; yet this duplication of property rights does not increase the amount of wealth in existence. Property is a legal right to wealth; it is not in itself wealth.

8. Public and Private Wealth.

While there is in most cases little difference whether we use capital or income as the measure of private wealth, or the wealth of the individual, the distinction becomes important in the case of public wealth, or the wealth of the community as a whole. To compute the national wealth, as some censuses do, by adding to the government property the capital or selling value of all private property is erroneous, because, as has just been pointed out, we should be counting many things twice. The only true measure of public wealth is income.

Sometimes it is mistakenly stated that the test of commercial value cannot be applied to public wealth. It is claimed, for instance, that rivers, climate and situation, which are not

and cannot be sold, form the essential constituents of public wealth. This involves the same confusion that was encountered in discussing the so-called personal wealth of an individual (§ 4). Rivers and climate do not constitute wealth. They enable a country to acquire wealth, just as intelligence or strength enables a man to acquire wealth. They are the source of wealth, but they are not wealth. America under the Indians had the same rivers and climate as now, yet no one would speak of the America of a thousand years ago as wealthy. Until these natural advantages are converted into actual results they do not become wealth. When they are finally made to contribute to a flow of income in the shape of finished products or services, these products and services acquire a commercial value and constitute wealth. The fundamental test of all wealth in modern times is income in the shape of benefits that can be parted with, and for which something will be given. Public wealth, like private wealth, has a commercial value, but public wealth can be estimated only in terms of income, not of capital.

The destruction of private wealth can never of itself increase public wealth, but the destruction of some forms of private wealth may bring about a far greater increase in other forms of private wealth and thus augment the public wealth. The abolition of slavery annihilated the wealth of the slaveholder; but it created the property of the former slave in himself, and led to such an increase of productive power that the total output of society was greater than before. The property of a gas company may be rendered valueless by the discovery of a natural gas field owned by the community, as in Toledo. Yet the destruction of the private wealth of the shareholders is far more than offset by the fact that each consumer of gas can now devote to productive purposes the sums hitherto necessary to pay the gas bills. We say, far more than offset, because the wealth of the shareholders was a capitalization of profits, while the wealth of the gas consumers is now increased by a sum equal to the total price of the gas, including both cost and

profits. There is, in short, an addition to the net income of society, and therefore an increase of public wealth.

Again, whether the annihilation of private wealth through a change from private to public ownership creates public wealth or not depends entirely on the success of the undertaking. If a government railway can be operated either more cheaply or with lower or more equal charges than a private railway, there will be an increase of public wealth. The test in every case is the flow of income to the individuals that constitute society; but this flow under modern conditions always has a commercial value.

Since income is the only adequate test of public wealth, we can speak of a wealthy country in two senses. If we think of the aggregate income, a large country will be called wealthier than a small one ; if we think of the average *per capita* income, a small country, like Belgium, would be wealthier than a large one like Russia. Inasmuch as the real object of our study is not wealth in itself, but man in his relation to wealth, it is clear that the second use of the term is preferable. It is the participation of an individual in the wealth of the community that makes social prosperity.

The true scope of economics is therefore the study of the forces which contribute to the growth of the social income or public wealth, and which regulate the shares of classes and individuals in this flow of wealth.

CHAPTER II.

ECONOMIC LAW AND METHOD.

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10. Meaning of Economic Law.

It is sometimes questioned whether there are such things as economic laws. The problem has often been complicated by the failure to distinguish between the various meanings of the term law. (1) Law may denote a body of customary usages, as the common law, or primitive law. (2) Law may mean a

statutory enactment, as a law of Congress. (3) Law may signify a rule of action or a precept, as a moral law. (4) Law may mean the statement of relations of cause and effect between phenomena, as a law of physics. When we speak of economic law, we properly use the word in the last sense. Everything that happens in the universe is related either as cause or as effect to some other thing. It is the function of science to ascertain this relation, and to formulate the law which explains the relation. In this sense every scientific law is a natural law, because it deals with the phenomena of nature, because it explains the natural or necessary relations between things. A scientific law states that definite causes necessarily lead to definite results.

Since economics is the science of industrial relations, an economic law is a natural law so far as it interprets the relations of human nature to industrial facts. Everything that occurs in economic life takes place in accordance with some law; it is the function of the economist to ascertain this law. Only in this sense can we speak of an immutable economic law. An economic law does not mean a precept or rule of action; there is nothing immutable about a rule of action. To speak of a law of free trade, for instance, is unmeaning. An economic law affirms that if certain causes exist, certain results are sure to follow. The facts themselves, whether of human nature or of the outward world, may differ; but given definite facts, definite consequences will ensue. The relation between these facts is capable of being expressed in a statement of cause and effect, which we call a scientific law.

It must not be overlooked, however, that economic laws are essentially hypothetical. We must be quite sure that the premises are true to actual life before we can draw a conclusion applicable to existing facts. So far as the premises are only partially true, the conclusions are only partly valid. This does indeed not prove that there are no economic laws, but only that the law may not yet have been ascertained, or that the particular statement of the law in question is only provisional.

In this respect economic law does not differ from any other scientific law.

In one point, however, the laws of all the social sciences do differ from those of natural science. The social sciences deal with man, and man is himself a continually changing factor. Man is a product of history ; economic institutions, like all other social facts, have their roots in the past. What is, is the outcome of what has been. With every mutation in outward conditions and social relations there comes a change in the economic facts or in the methods devised to secure adaptation of means to end. Nothing is so rare as the historical perspective ; nothing so difficult to realize as the relativity of existing institutions. At one stage of scientific inquiry, for instance, it was assumed that private property was a natural phenomenon, an outcome of the very nature of man. It is now seen that private property is not an absolute, but an historical category ; that the conception itself was of slow growth, and that its content varies from age to age. What is true of private property is true of almost every other economic institution. It has grown to be what it is ; it has once been different, and will again be different. While there is life, there will be change.

In outward nature, on the other hand, we operate with forces that are in one sense unchanging. For instance, in discussing physical or astronomical facts we are justified in taking for granted the existence of gravitation. In discussing economic facts, however, it would not be safe to assume in every case the existence, in unimpaired activity, of the motive of self-interest. Not only may there be counteracting forces — for that is true also of physics — but the motive itself may suffer a change. We cannot appeal to the natural law of self-interest in the same sense that we speak of the natural law of gravitation. The one is dependent on man, the other is independent of man. In this sense there are no "natural" laws in social science. The frequent appeal in current discussion to the natural laws of society as something apart from man, and over

which he has no control, is erroneous. There are no natural laws in the sense that man himself is powerless to alter the conditions which form the basis of the statement.

The French school of Physiocrats in the eighteenth century first applied to economics the conception of natural law as a part of the order of nature, from the overwhelming necessity of which no one could escape. John Stuart Mill, although he still held fast to the old conception of natural law as applied to production, pointed out that the laws of distribution were themselves capable of being modified by human agency. Modern science has shown that what is true of distribution is equally true of production, and that there is no natural law as a part of a natural order in any field of economic inquiry. The old conception of natural law has been abandoned in economics, as it has been given up in politics and jurisprudence. In its stead has been put the more modern idea of natural law, in the sense of scientific law. Modern natural law is essentially hypothetical in character and carries with it no moral implication.

We must be careful, then, not to confuse the two conceptions. An economic law is a natural law so far as it states that given conditions will lead to given results. An economic law is not a natural law so far as it implies that human effort is impotent to modify the conditions which lead to the results.

It was as a protest against the natural law of the old economists that the term historical law was introduced. Some of the newer writers urged that the essential point was to study the evolution of economic law itself as embodied in the changes of economic life. To them the only economic laws were the historical laws which throw light upon the growth of society and trace the development of economic relations. This, however, also involved an exaggeration, in that it put more emphasis on the past than on the present, and often failed to afford an adequate analysis of existing facts. This particular controversy has now fortunately been laid to rest.

Another objection to the idea of economic law may be men-

tioned. We frequently hear it said that something is true in theory but not in practice. The fallacy of this statement is evident when we reflect that a theory is nothing but the formulation of a law, a statement of the necessary relations between facts. If a thing is true in theory, it must be true in practice. The difficulty is to formulate the correct theory. When people say it is easy to "theorize," they mean that it is easy to frame an alleged theory. Nothing is harder than to construct a true theory. For a true theory must fit into every fact; otherwise it is not the correct theory. The hasty and untrue generalizations of those that set themselves up as "theorists" are really responsible for the seeming antagonism. There can be as little divergence between true economic theory and actual economic life as between the theory of chemistry and chemical phenomena. It is the theory which must be made to fit the facts, and not the facts which must be twisted to suit the theory.

11. Methods of Economic Investigation.

With the broader conception of economic relations, the old contest over method has been relegated to the background. It was formerly much discussed whether economics was a deductive or an inductive science; whether, in other words, we should start out from certain general principles, or attempt to reach these principles through the interrogation of facts. Sometimes the contrast between them was expressed by the term abstract or analytical, as opposed to the concrete or historical or comparative method.

There is at present a substantial agreement among economists that both methods are correct, and that it would be a mistake to assert the predominance of either. It is a question not of economics in general, but of the particular problems to be solved. In some the one method is more fruitful, in some the other. In such a problem as the incidence of taxation the historical or inductive method would be of little avail, because of the difficulty of disentangling the fundamental cause from among the complicated facts of actual life. In

such a problem as the variation between piece wages and time wages the deductive or abstract method would probably not bring us to our goal so quickly. Each method has its advantages and its limitations. In the deductive method we can be sure of our conclusions only after checking them by the facts; in the inductive method we cannot formulate the law until we find that it is in harmony with well-established principles. In the one case we start from the principle and reach the facts; in the other we start from the facts and attain the principle. Neither can be successfully divorced from the other. In most cases of reasoning, indeed, we use, consciously or unconsciously, each method in turn.

Each method, again, when pushed to an extreme is either dangerous or barren. The earlier advocates of the abstract or analytical school sometimes framed their generalizations hastily, and, through their failure to make allowance for the numberless counteracting tendencies, often gave an appearance of unreality to their conclusions. Such, for example, was the celebrated wages-fund theory (§ 174). The more ardent followers of the concrete or historical school have sometimes exaggerated the difficulty of reaching general laws at all, and have left us to wander aimlessly in the forest of facts, putting off to an ever-distant day their analysis and utilization. On the other hand, the more moderate advocates of each method have accomplished a real advance. The historical school has shown that we can really understand what is only through a comprehension of what has been, and that the problems of fundamental importance to social well-being are those of change. The analytical school has shown that the particular is of value only as illustrating the general, and that no true progress in economic reasoning can take place until we frankly recognize the need and the existence of general principles.

12. Relation of Economics to Other Sciences.

In the modern hierarchy of thought the points of contact between the various sciences are continually becoming more

numerous. We recognize the possibility of regarding facts from different points of view. With increasing differentiation, on the other hand, there also comes the recognition of increasing unity.

With some sciences the points of contact have been emphasized only in recent years,—as, for instance, with psychology and biology. The economist whose chief concern is with the law of value necessarily operates with the data of psychology. Value can have no existence apart from the mental conditions of man. The whole conception of demand is essentially psychological. While, however, the connection between psychology and economics is real and intimate, it may be doubted whether the psychological treatment of economic relations can carry us much further than to the comprehension of the elementary principles of valuation. In the same way, it was at one time the fashion to apply biological concepts to economic life, and to speak of the economic organism, the economic structure and the economic functions. It is, however, coming more and more to be recognized that these are vague analogies rather than identities; that the laws of life in the economic world are not the same as those in the physical world; and that the only real aid which biology can give to economics is to enforce the conviction that in social as in animal life there is continual growth and perpetual change.

With another class of sciences, mathematics and statistics, the relation is more intimate, but primarily from the point of view of method. Economics deals in one sense with quantitative relations. Market values are expressed in figures; and mathematics is of undoubted aid in enabling us to make a short cut, as it were, through the mazes of figures. Both algebra and geometry have frequently been employed with success; and it is remarkable that some of the greatest steps in advance in the pure theory of economics have been taken by those who, like Cournot or Gossen or Jevons or Marshall, approached the subject from the mathematical side. The advocates of the mathematical method, however, are apt to

overshoot the mark. They often forget that the range of questions with which they can deal is essentially limited, because social processes cannot readily be reduced to exact quantitative form. They do not always remember that the variables with which they operate are often precisely the important factors in social life; and that human aspirations and human needs cannot be pent up within the confines of a mathematical formula, no matter how broad it may appear. Within a narrow field the mathematical method can be used to great advantage, but it will always be of more use to the writer than to the reader.

In the case of statistics the danger is of the opposite kind. In mathematics the difficulty is to get a law which will not be so all-embracing as to be inapplicable to real life. In statistics, even granted that we have collected the true figures, the difficulty consists in distilling from them any general principle of lasting value. In the first case we run the risk of formulating unrealities; in the second of stating platitudes. What was said in a preceding section of the abstract and the concrete methods of investigation applies with augmented force here. The mathematical method is the abstract method pushed to an extreme; the statistical method is the concrete method pushed to a like extreme. Statistics form an indispensable adjunct to economic inquiry, but they are of value principally for purposes of illustration rather than of construction. They show us that there is a reign of law in the moral as well as in the physical world; they do not always enable us to ascertain the law.

13. Relation of Economics to Politics and Other Moral Sciences.

When, however, we come to the moral sciences, of which economics itself is one, we notice a more intimate relation. These are politics, jurisprudence and ethics.

(1) The study of politics or the science of the state has gone through several stages. For a long time history was dominated by the "great man" theory of politics; attention

was centred chiefly in the kings and the battles, the court intrigues and military problems. At a later period more emphasis was put on the development of institutions compared with which any individual, however eminent, was insignificant. Finally, it was recognized that political life itself is closely intertwined with the economic life, and that the forms as well as the practices of government are profoundly influenced by the conditions of production as well as by those of distribution. Economic facts would then be the cause ; political phenomena the result.

On the other hand, since all modern economic action is carried on within the framework of the state, when we deal with any practical economic institution no final solution of the problem can be reached until the effect of the political conditions be weighed. In discussing the economic consequences of government ownership, for instance, the status of the governmental civil service is a potent consideration. Political facts may profoundly modify the economic conditions, instead of being modified by them. While, therefore, politics deals with the relation of the individual to the government, and economics with one aspect of the relations of individuals to each other, there is almost always a distinct interaction between the two. It is a necessity for the publicist to comprehend the economic basis of political evolution ; it is the business of the economist to remember the political conditions which affect economic phenomena.

(2) What has been said of politics applies with still greater force to jurisprudence. All systems of law are in the main the crystallization of long-continued social usage. Social customs are coeval with the origin and growth of society itself ; the mandatory force of the positive law comes at a later stage in the evolution. The unwritten gradually turns into the written law, until the positive enactment is invested with the sanction of a sovereign command. As society develops, the law is in a perpetual process of change. No code is final ; it always represents a given stage of social life. The law is the outward

manifestation ; the social, and especially the economic, fact is the living force. The formal juristic conception may remain the same ; its content must be modified by every change of economic life. Legal history is really a handmaid to economic history ; legal development is inexplicable apart from economic forces. The economic fact in this sense is the cause ; the legal situation is the result.

At any given moment, however, economic phenomena take place within a legal framework. The elemental forces of economic life cannot indeed in the long run be conditioned by legal forms ; but the law may for a time hold in check, or give a new direction to, economic forces. Take as an example the English law of primogeniture and of entailed estates as compared with the French laws which have led to the system of small farms. History is full of instances where the law has for good or for evil affected the economic environment. Just because the economic life, however, is prior to the legal system, there is always, at any given moment, the danger of a lack of harmony between the two. It is in the interval between the economic changes and the readjustment of the legal facts that the influence of law upon economics is keenly felt. Life indeed consists of a perpetual adaptation of outward forms to inner forces, and thus the economic basis of a legal system is really the important fact to the social philosopher. In practical life, however, we deal with outward forms, and thus the legal shape of the economic relations must never be lost from sight. In economics and jurisprudence there is continual action and reaction.

(3) Close as are the relations of economics with both politics and jurisprudence, the connection between economics and ethics is closer still. This has often been denied. In the popular mind there is even an idea that there is a real conflict between them. In truth, this seeming conflict can be traced back at least as far as Adam Smith ; for he based his system of political economy on the principle of self-interest, his system of ethics on the principle of sympathy. Thus there grew up

the idea that the two leading motives of human action are the purse and the conscience ; that the economic man is represented by the one and the ethical man by the other ; that there is a hopeless conflict between them ; and that economics and ethics have nothing to do with each other.

The modern view, however, is different. Ethics, like jurisprudence and politics, is now recognized as essentially social in its origin. All individual ethics are seen to be the outgrowth of social ethics. The very conception of right and wrong was originally a social conception, afterwards transferred to the individual. Since man lives in society, whatever was recognized as making for the general good came to be regarded as the test of morality. For individuals to persist in doing what was not for the social benefit must finally have ended in the destruction of society, and therefore of the individual himself as a member of society. Social, not individual, utility therefore unconsciously became the criterion. When we say honesty is the best policy, we do not mean that it is always expedient for the particular individual to be honest, for we unfortunately know of cases to the contrary. What we mean is that honesty is the best policy for society, and therefore has become right for the individual as well. Ages upon ages of this experience have converted this and similar conclusions into a human instinct, and have thus made us realize the existence of the categorical imperative as the sovereign moral law. The whole ethical progress of man consists in conforming his actions to the ideal social welfare.

(There can therefore be no conflict between correct economic action and true ethical theory. Adam Smith's principles are indeed true, but they are complementary, not antagonistic. Sympathy or altruism pushed to an extreme involves the destruction of self and therefore the death of society ; self-interest or egoism pushed to an extreme means the destruction of others and therefore likewise the death of society. Social life can endure only through a balancing of these two principles, each reinforced by the other.) Since economics,

like ethics, is primarily a social science, the true economic action must in the long run be an ethical action. An individual may pursue selfish economic ends, and may augment his own wealth at the cost of moral progress ; but he is then subordinating public to private considerations. Broadly speaking, and regarded from the point of view of society as a whole, what is economically advantageous must in the long run be right ; and what is correct in ethics must in the end also be profitable to the business world. The modern economist therefore has become just as mindful of the ethical aspects of every economic problem as the modern moralist has been forced to recognize the economic side of his ethical problem.'

14. Scope of Economics.

From what has been said it will be seen that the scope of economics is varied. This cannot be expressed in the old way by distinguishing between pure economics and applied or practical economics. [In the first place, no such sharp line can be drawn ; and, secondly, even if the two parts could be distinguished, they would not cover the whole field of economic inquiry.

The distinction between pure and applied economics has been much exaggerated. If the study of economic theory has any justification at all, it must fit into the facts of actual business life. There may, indeed, be such a thing as pure mathematics, which discusses conclusions from premises which exist only in the mind of the investigator and find no counterpart in actual life. But if there is such a thing as pure economics in this sense, it would be of no earthly use except as a logical exercise or a play of the imagination. Economics is the science of industrial relations,—not as they might exist hypothetically in the mind of the investigator, but as they really exist. Economic law must explain economic facts ; the law inheres in the facts, the facts are the embodiment and illustration of the law. The attempted distinction between pure and applied economics is a clumsy way of putting the emphasis

on the two sides of the same thing,—the law in its relation to the facts.

Sometimes the distinction is expressed in another way, as when economic science is opposed to economic art. This is indeed a distinction; but economic art does not deal with principles at all, it deals with precepts. Economic art is an awkward expression for the economics of statesmanship. The legislator practises economic art; he may or may not study economic principle. If, however, he runs counter to the principle, he cannot succeed in the art.

In the second place, the old distinction between pure and applied economics is untenable, because the discipline, whether in its abstract form or in its application, is made to deal only with actual conditions. The preceding analysis has disclosed the inadequacy of this point of view. Economics is to teach us to understand the principles of industrial life. Its chief object, indeed, is to explain to us what is. If all society, however, is the result of an evolution, we can understand what is only by knowing what has been. Moreover, if the relation of economics to ethics is such a close one, it is equally evident that we can criticise the present not only in the light of the past, but in the light of the future; and that a discussion of social tendencies at once brings up the question of what ought to be. Economic inquiry is teleological as well as historical.

In every phase of our study, therefore, we must endeavor first to ascertain how the particular relations have come to be what they are; secondly, to explain what are the conditions of the problem as it actually exists; and, finally, to forecast the probable changes in the institutions as a result of an alteration in the conditions of the problem. Economic science, in short, while it deals primarily with the present, cannot avert its glance from the past or from the future.

Part II.

Elements of Economic Life.

Book I.

Foundations of Economic Life.

CHAPTER III.

THE NATURAL ENVIRONMENT.

15. References.

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16. Climatic and Geological Conditions.

Man, like all animals, is indissolubly bound to the soil. He is in last resort dependent upon nature for what he is and what he has accomplished. This is especially true of his economic

life, which, as we have seen, consists ultimately of his relations to material things. The basis of economic activity is the material environment. The modern sciences of geology, of meteorology and of commercial and anthropo-geography have enabled us to comprehend phenomena whose significance was until recently but vaguely apprehended. The economic aspects of the natural environment may be subsumed under the four heads of the climate, the geological structure, the flora and fauna and the geographical location.

Only a portion of the globe is habitable. The uninhabitable parts, moreover, change with the geologic ages. Large sections of Northern Europe and America which are now the homes of a vast population were æons ago in the perpetual embrace of the ice king. On the other hand, explorations in the sandy wastes of the Asiatic deserts have brought to light the ruins of numerous and populous cities. Not only economic life, but all life, is at the mercy of the elemental forces of nature.

Even in the habitable portions of the globe the climatic conditions are of the first importance. At the very outset the influence of temperature is obvious. The rigor of the arctic regions and the bounty of the tropical zone are alike hostile to economic progress. Where the food supply is scanty and the low temperature benumbing, human resources are taxed to the utmost in securing the bare wherewithal of life, and no surplus energy is left to accumulate a store of wealth. Where, on the other hand, nature pours out her treasures with a lavish hand, and the torrid heat enervates and lulls into lethargy, scarcely any activity is needed to procure subsistence, and little is ordinarily exerted for other purposes. Although we have had civilization in hot countries, the real home of the greatest economic progress has always been in the temperate zones, where man is goaded out of his natural laziness by the prick of want, and lured on to effort by the hope of reward.

In many other ways does climate affect economic life. The alternations of heat and cold, both seasonal and occasional,

are of commanding importance. The character and length of the seasonal alternations condition the size and quality of the harvest. The variations of intra-seasonal temperature with its sudden oscillations go far to explain the nervous, active American temperament and its economic results, as compared with the comparative stolidity of the English, due to an equable climate. Scarcely second to the influence of temperature is the significance of the rainfall and the humidity. Insufficiency of moisture and lack of sunshine are alike inimical to economic welfare. Not only will differences in rainfall affect the forestry conditions, as well as the size and therefore the economic utility of the rivers, but in addition the laborious contest with a semi-arid region will create in the individual stalwart economic and political qualities. The so-called Anglo-Saxon individualism is largely the product of climatic conditions. When the Englishman leaves his moist and fertile home for the almost riverless wastes of the antipodes, he becomes, if not a socialist, at all events the next remove to one. In Australia we accordingly find government railroads, government insurance, government steamships, government frozen-meat industry and many other examples of government activity which would be viewed with dismay in the mother country.

In the same way the individualist theory in America is largely the product of definite economic conditions, resting on a new climatic environment. What careful interpreter of American history does not know that the arduous struggles with a rebellious soil and an inhospitable climate caused the American of a century ago to turn to government whenever he thought he might secure help? State roads, state canals, state railroads, state bounties, state enterprises of all kinds suited to the needs of the settlers were the order of the day. When, however, the mountains had been crossed and the fertile valleys of the Middle West, with abundant rainfall and a genial climate, had been reached, there came a wondrous change. Conscious of their new opportunities, the citizens now desired only to be let alone in their quest for prosperity. Private initiative

replaced government assistance and the age of corporations was ushered in. Insensibly the theory of governmental functions changed, and the doctrine of *laissez faire* carried all before it. The theory of individualism was a natural result of the economic, and at bottom of the climatic, conditions of a new environment.

While the climate is one of the causes that influence the earth's surface, the economic life is profoundly affected by the entire geological formation. In the first place we have the fundamental fact of altitude, including the distinction between mountain and valley, coast and plain, with their varying degrees of production. Furthermore, upon the chemical ingredients and the physical constituency of the soil rests in last analysis its original fruitfulness. The difference between the soil of the black belt and the hill lands of Alabama explains the varying aspect of the negro problem there; and in like manner the contrast between the arable and the grazing lands of the Far West enables us to comprehend the economic and political conflicts between the farmer and the ranchman.

Of still more importance than the surface of the earth is what lies beneath the surface. There are writers who interpret the entire progress of humanity in terms of the metals. While this is assuredly an exaggeration, there is no doubt that the metals have played a dominating rôle in the history of economic progress. In more primitive times the advance of civilization was in many places in large measure bound up with the copper and tin deposits. Even at present, with the active interchange of commodities, the mineral wealth in the shape of copper and iron fields, gold and silver mines, lead and tin deposits, goes far to explain the preponderance of the fortunate countries or sections where they are found. If we add to the metals the coal, the diamond and the oil fields, we shall readily recognize the enormous influence exerted, especially in modern times, by the existence of these mineral treasures in such places as Colorado, Pennsylvania, Western England, and South Africa.

17. The Flora, the Fauna and the Geographical Location.

The character and extent of the vegetable and animal life are a result of the climatic and geological conditions that have just been mentioned. Upon the union in proper proportions of rain, sun and chemical ingredients of the soil depends the possibility of raising all the staple crops like hay, wheat, cotton, rice, tobacco, sugar, coffee or tea, or of obtaining the timber, rubber, cork and other products of the forest. The American Indian civilization was built up to a large degree on maize, as that of the Asiatic Indian largely rested on rice. If cotton was king in the South before the war, wheat and hay were to a great extent the monarchs in the North. The control of these natural resources is responsible for many of the mutations of nations. To give only two examples: the struggle for the spice islands of the East is the key that unlocks the mysteries of the European political contests of the sixteenth and seventeenth centuries; the sugar situation in Cuba led to the revolution which brought about our recent Spanish war, and thus indirectly the expansion of the American republic into imperialism.

Of at least equal importance in early economic progress is the existence of animals that can easily be domesticated. The fact that the horse, the cow and the sheep were found in Asia rendered possible the transition from the hunting to the pastoral stage and laid the foundation of the later economic edifice of the more advanced Asiatic and European races. For these animals subserved the various ends not only of food supply and provision of clothing, but of means of locomotion and above all of beast of burden. Their absence in recent geological periods in America was perhaps the chief cause of the backwardness of the Indians. Where a relatively advanced civilization was reached, as by the Incas in Peru, it was in great part due to the existence of the llama, although the inferiority of this animal to the horse, the cow and the sheep explains in large measure the backwardness of the South American civili-

zation. In Australia there was not even this resource, for the kangaroo could not be utilized and the blackfellow remained a savage.

In contrast to the flora and fauna which are of importance from the first, favorable situation, although it also plays a rôle from the outset, becomes of signal importance in the later stages of economic life when commerce has developed. Proximity to the sea, possession of a safe and ample harbor, location on a river,—all these explain the maritime supremacy on which so much of past civilization has rested. It is no mere accident that the world's progress centred for many centuries around the Mediterranean, and that Egypt, Greece and Rome in turn controlled for thousands of years the destinies of the human race. Passing over the mediæval Italian seaports and the German Hansa towns, it is again significant that the two greatest metropolitan centres of the world to-day, London and New York, have attained their position chiefly because of their maritime importance. Some writers have even gone so far as to maintain that all civilization can be expressed in terms of the great rivers and seas. Of the twenty largest cities of the United States, nine are found on the seacoast, five on the Northern lakes, and five on the Mississippi and Ohio rivers.

It would, however, be a mistake to lay too much stress upon mere water communication. Trade conducted on *terra firma* has played a scarcely smaller rôle. Many a populous city is nothing but the development of a cross-roads village, become the busy mart of transit on a great thoroughfare. The centres of the Babylonian and Assyrian civilization of old were largely of this character; and to a similar favorable inland situation must we ascribe the prosperity of numerous cities in all parts of the world to-day, such as Berlin, Manchester (England), and Denver, especially where the rivers are few or small. A distinguished French author, Demolins, has even ventured to explain the existence of the primary social types of humanity by the land routes which the various nations traversed in the course of the long migrations from their ancestral home to

their present abodes. However exaggerated this insistence upon a single factor may be, there is little doubt as to the cardinal influence of location upon commercial opportunities.

With the further development of economic life, commerce becomes a handmaid not only to agriculture but to industry. The industrial centres are dependent not only on the commercial facilities for disposing of their products, but also upon the ease with which they can secure the raw material and cheap power. Contiguity to the coal and iron fields explains the growth of the great steel industries. The presence of local water power made possible the early centres of the textile industries in New England, as well as the rapid growth of Minneapolis in milling. The grain fields of the Middle West are responsible for the breweries in the western and the distilleries in the Eastern States adjoining the Mississippi. The slaughtering and meat-packing centres have gradually moved west with the change in the ranching frontier, and the incipient industries of the Pacific slope are still largely determined by their propinquity to the forests, the orchards or the river fisheries.

18. Changes in Environment.

While man is thus subservient to nature in his economic activities, the subjection is not complete. In fact the distinguishing mark of difference between men and animals is that while the natural environment moulds all living things, man alone can to some extent modify the environment. This partial control of economic resources depends on the spread of intelligence, the growth of technique and the command that science gives over the forces of nature.

Of all the natural conditions the climate is the most difficult to alter. Yet even here a beginning has been made. We pass over with a mere mention such minor points as the mitigation of the effects of undue heat through the introduction of artificial ice, or the creation of the proper atmospheric conditions in certain factories. More significant are the effects of forestry and irrigation. It is now coming to be recognized that forests

play an important rôle, not so much in affecting the rainfall, as in equalizing the flow of the rivers and thus obviating the sudden alternations of inundation and drouth with their devastating effects on cultivation. The afforestation of treeless lands and the reforestation of denuded hillsides are at present a part of the economic policy of every careful government. The marked increase in the American forest reservations, state as well as national, is therefore a subject for congratulation.

The conditions of moisture are further affected by the drainage and reclamation of swamps and marshes. Prominent illustrations of such effects are visible in the English fens and the once submerged, but now dyke-protected, lands of Holland. The history of the Italian Maremma, again, shows the alternate consequences of neglect and intelligent effort on climate and soil. Even greater results can be achieved by diminishing aridity rather than by decreasing excessive moisture. Irrigation was practised by the Babylonians, the Persians and other nations of antiquity, and on a somewhat larger scale by the Arabs of mediæval Spain. The recent damming of the Nile by the British constitutes perhaps the high-water mark of modern achievement. It is in the United States, however, that the greatest conquests of irrigation are to be expected. With the gradual exhaustion of the arable area in our public domain the demand for a reclamation of the so-called arid lands has been urged with increasing intensity. The success of the Mormons in Utah and the efforts of a few private companies in California and elsewhere in converting the desert into a smiling and exuberantly fertile district have shown what can be accomplished. The Newlands law of 1902 which set aside for irrigation purposes under national control the large sums to be derived from the sales of public lands marks the beginning of a new epoch in American history, for it will ultimately lead to the recovery of several tens of millions of acres and to the influx of corresponding millions of settlers.

The nature of the soil as affected by geological conditions is, as we have seen, of momentous significance. Yet nothing

is more certain than the great influence of human effort on the character of the soil. Just as the best land can become the poorest through wasteful cultivation, so the worst land can be converted into the most fruitful. The application of manures, both animal and mineral, and the replacement of an extensive by an intensive cultivation with the proper rotation of crops will soon change the chemical ingredients of the soil. The problem is not one of technical possibility, but of economic profit. Up to this time there has been in the greater part of the western world such an abundance of successively fresh tracts of land that adequate returns have been achieved by the extensive methods of cultivation involving only the most superficial tillage. Even the so-called more intensive cultivation has denoted only the slightest application of capital to land. In the Oriental countries, on the other hand, the ignorance of scientific agronomy has made intensive culture depend almost wholly upon the hand and not the head. What is really meant by the possibilities of the application of science and capital to agriculture, in some such proportions as they are now utilized in industry, may be faintly discerned in the garden patches and truck farms in the neighborhood of great cities. In certain parts of Europe, in fact, the tenant on the expiration of the lease has the right of carting away with him a certain depth of soil. The land itself is thus coming to be in a sense the product of human energy.

While the existence of the flora and the fauna ultimately depends on the physical environment, there is a large margin of indifference within which old species may be reintroduced or new ones made to flourish. Many plants in all parts of the world are not indigenous. To mention only a few American products, rice and cotton in the South, the sugar beet and the alfalfa in the West, as well as all kinds of vegetables and fruits throughout the length and the breadth of the land, have been introduced by human agency from abroad; and the experiment stations are constantly at work improving the seed. To pass from plants to animals, there is no need of pointing out the

marvellous results accomplished in bettering the breed and economic efficiency of the horse, the ox and the sheep, none of which were found here in the age of Columbus.

19. Changes in Location.

By far the most important achievement of man in altering the natural environment is to be seen in his success in overcoming the influences of location. This has been effected through a threefold improvement in the methods of transportation and communication, that is, the transportation of commodities, the transmission of power and the communication of ideas.

(1) Upon the transportation of commodities has depended the growth of all internal trade and international commerce. The very conception of commerce involves the transfer of the superfluities of one section to the consumers of another, that is, the weakening or the annihilation of distance as an economic factor. So long as commerce was dependent upon the sail-boat or the slow-moving beast of burden, this annihilation of distance found its well-defined limits in the cost and time of transportation. With the invention of the canal and the application of steam and electricity to land and sea transport, a revolution was effected in the saving of cost and time, and perishable as well as bulky commodities were now brought within the range of both ordinary and distant trade. The railway has largely replaced natural advantages of situation by artificial ones. A town on the railway line is for all economic purposes nearer the market than another off the line, even if possessed of a better natural location. A competitive centre at the junction of several roads enjoys a superiority which will enable it to overcome a rival more advantageously situated by nature but less well served. With the increase of facilities and lowering of cost, geographical situation is yielding to the facts of artificially created location.

Changes in transportation facilities accordingly are largely responsible for the growth and decline of cities, sections and

nations. With every shifting of trade routes, communities advance and recede. Again to confine ourselves to recent history, the completion of the Erie canal in 1825 gave to New York, then a city of secondary importance, a position of undisputed pre-eminence ; the construction of many a railroad threw into decay the villages on the old post-roads not served by the new lines ; the piercing of the Isthmus of Panama by the interoceanic canal will have the most far-reaching consequences on the industrial efficiency of the South and the prosperity of Great Britain.

(2) If transportation of this kind is so potent in affecting the distribution of commodities and thus, by providing a market, indirectly influencing their production, changes in the transmission of power are equally effective in their direct influence. So far as power is the result of fuel, whether coal, wood or oil, it might be claimed that the transmission of power is tantamount to the transportation of the commodities out of which the power is generated. The recent application of electricity, however, bids fair to revolutionize modern industry, not only by reducing cost, but by virtually overcoming distance. Through transmission of electricity water power is no longer limited in its beneficent results to the localities in the immediate neighborhood. With the gradual extension of the profitable area of such transmission, we may expect to witness a great change in the geographical dependence of industrial centres. Moreover, if the day-dreams of certain scientists are ever realized, so that in the not distant future we shall be able to pick up electricity from the surface of the earth, the last link in the chain of the industrial advantages of natural location of power will be destroyed.

It must also not be forgotten that power in industry includes not only mechanical power, but human power. The provision of the labor force itself is vitally affected by changes in the facilities of transportation. In a modern metropolis it may be of comparatively little importance whether it takes a few hours more or less to transfer commodities to the home or the

factory. Beyond a certain limit, however, almost every minute counts in the time required for the human worker to reach his home. The introduction of electric transportation prodigiously augmented the possible size and industrial power of modern cities, but the bringing of the suburbs within the city limits has greatly affected values, and changed the relative advantages, industrial as well as domestic, of outlying and intermediate areas. There is a well-nigh kaleidoscopic change going on in the conditions of geographical location.

(3) Finally, the communication of intelligence has played its part in reducing the significance of geographical location. The post, the telegraph and the telephone have co-operated with other economic factors in giving to the modern market an international character. The least change in the visible supply of wheat in Minnesota or of cotton in Texas is reflected in the market at Liverpool. Any alteration in the conditions of the tobacco yield in Java or of the tea crop in China is felt in the exchanges of New York. But, above all, the dependence of particular sections or countries upon mere location has been weakened in a special sense by the spread of modern science. Science is international in its workings; the utilization of discovery and invention is no longer the exclusive possession of a favored nation. The whole world is becoming akin in production, as in consumption.

Thus it is clear that while external nature still plays its fundamental rôle in explaining the economic life of man, the progress of civilization is utilizing in countless ways certain natural forces to counteract and to minimize the influence of other natural forces. Nature at bottom remains the mistress, but man can within certain limits emancipate himself from the bondage, and secure a mastery which will insure prosperity and progress.

CHAPTER IV.

THE POPULATION.

20. References.

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21. Density of Population.

While the problem of external nature is primarily physical, that of population is principally biological and sociological. Population, however, also has its economic aspects. It touches the field of production in so far as there is a relation between the size and constitution of the population and the creation of wealth; it affects the subject of distribution because with a given quantity of production, the *per capita* dividend will obviously be influenced by the size of the divisor.

The subject falls naturally under the heads of the status and the movement of the population. By the status of the

population are meant its density and distribution ; under the movement of population we have to consider its increase and its mobility.

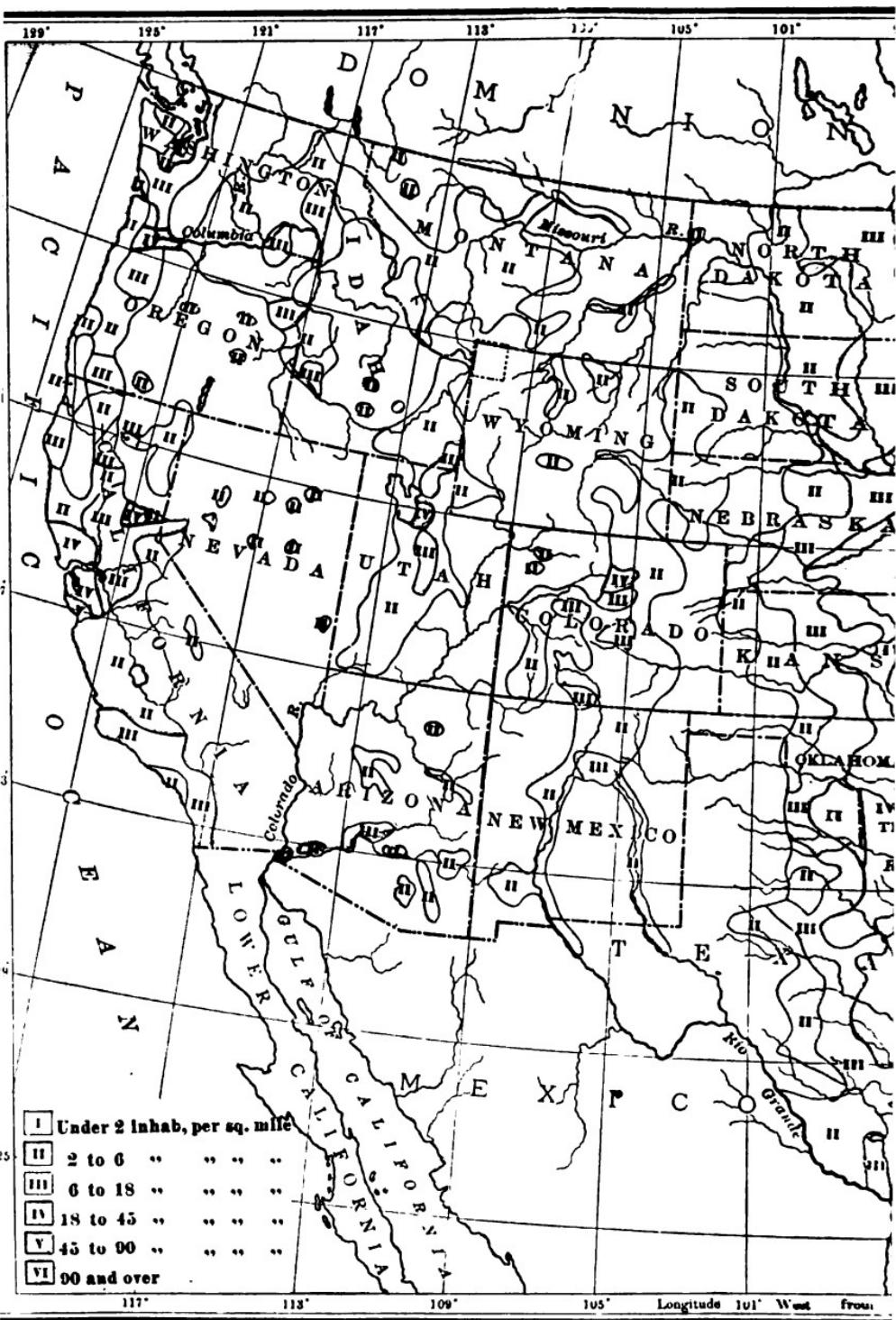
The density of the population is conditioned by the character of the economic resources and the degree of economic development. That is, it depends not only upon the external environment, but upon the use made of it by man. The density and distribution of population as dependent upon drainage, altitude, temperature and humidity, which play a considerable rôle in the tables of the American census, may be passed over here as referable to the influence of the natural elements. The human element, by transforming the environment, becomes the increasingly important factor in economic progress. It is manifest, for instance, that the hunting stage can support less inhabitants to the square mile than the pastoral, and that an agricultural population must be more thinly scattered than a population engaged in industry. In an agricultural community, again, the density of the population will vary with the character of cultivation. Population is indeed conditioned by food supply ; but food supply depends not only upon the number of acres but upon the product per acre.

When a community is no longer self-dependent, and carries on exchange with another, greater inequality in the density of population becomes possible. Industrial and commercial communities barter their finished products for the raw materials of agricultural sections. While the total population still depends on the total food supply, the surplus food of the agricultural group is secured by the industrial and commercial group, with the result of a greater concentration of population in the latter. Density of population in any particular country or section which has outgrown primitive economic conditions thus depends not so much on the production of food as on the existence of the wealth which can procure food. England had all through the middle ages a far sparser population than France, because although they both exported wheat it

was more predominantly agricultural; but in the nineteenth century, with the prodigious increase in industry and commerce, England became a food importer and the density of the English population soon exceeded that of the French. The following table, which gives the number of inhabitants per square mile in 1900-1901, will show the influence of economic conditions on density:

Belgium	589	Switzerland	207
England	437	France	188
Netherlands	416	India	167
United Kingdom	344	Spain	97
Japan	296	Russia	51
Italy	294	Turkey	33
Germany	270	United States	25
China	266	Canada	1.75
Austria	226	South Australia	0.33

The striking facts here are, first, that a very intensive agriculture combined with advanced commerce, as in China and Japan, can support a population as dense as that of a highly developed modern industry; and secondly, that the greatest density is found in those countries, like Belgium, England and Holland, which unite very diversified industry with a fairly intensive agriculture. The relative capacity of economic stages to support population is illustrated by the conditions of the United States. The census of 1900, as appears from the map opposite page 50, divides the country into six groups with a density respectively of less than 2, 2 to 6, 6 to 18, 18 to 45, 45 to 90, and over 90 inhabitants to the square mile. The first group comprises the hunting, trapping, fishing, lumbering and mining sections; the second includes the grazing communities; the third contains the purely agricultural areas; in the fourth group, still mainly agricultural, commerce and manufactures have commenced to make some progress; while in the fifth and sixth groups there is a continually greater influence of industry. Computed by states rather than by sections, there are eight commonwealths with a density of over 100, namely, Ohio, Maryland, Pennsylvania, New York,



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ON OF THE UNITED STATES, 1900.

of Twelfth U. S. Census.]

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Connecticut, New Jersey, Massachusetts and Rhode Island. The conditions in each state are indicated in the chart opposite page 52. It thus appears that in some of the industrial commonwealths of the United States the density of population is about equal to that of Europe.

22. Concentration of Population.

Slightly different from the density is the concentration of population. This refers to the distribution between city and country. A greater density generally, but not necessarily, implies a greater agglomeration. New Hampshire, for instance, has a greater density of population than California, but a smaller urban population.

The industrial revolution during the nineteenth century and the changes in transportation and commerce by which it has been attended are chiefly responsible for the drift of population to the cities. In 1790 3.14 per cent of the American people lived in cities of 10,000 and more ; a century later the seven colonies of Australasia with almost precisely the same population as the United States of a century earlier had 33.20 per cent living in such cities. In 1790 3.40 per cent of the population of the United States lived in cities of 8,000 and over ; in 1900 this proportion had grown to 33.1 per cent. If we include in urban population centres of 4,000 people, the percentage is 37.3. In several states it is far higher. Taking the states whose urban concentration exceeds that of the average for the entire country, the percentage of the population living in cities of at least 8,000 is as follows : Colorado, 38 ; New Hampshire and Ohio, 39 ; Delaware, 41 ; California, 44 ; Pennsylvania, 46 ; Maryland and Illinois, 47 ; Connecticut, 53 ; New Jersey, 61 ; New York, 69 ; Massachusetts, 76 ; Rhode Island, 81. With the exception of Colorado, the chief seat of mining activity, it is obvious that these are all industrial and commercial centres. In a few states the urban concentration even equals or exceeds that of England and Wales, which amounted in 1901 to 68 per cent in towns over 10,000, and to

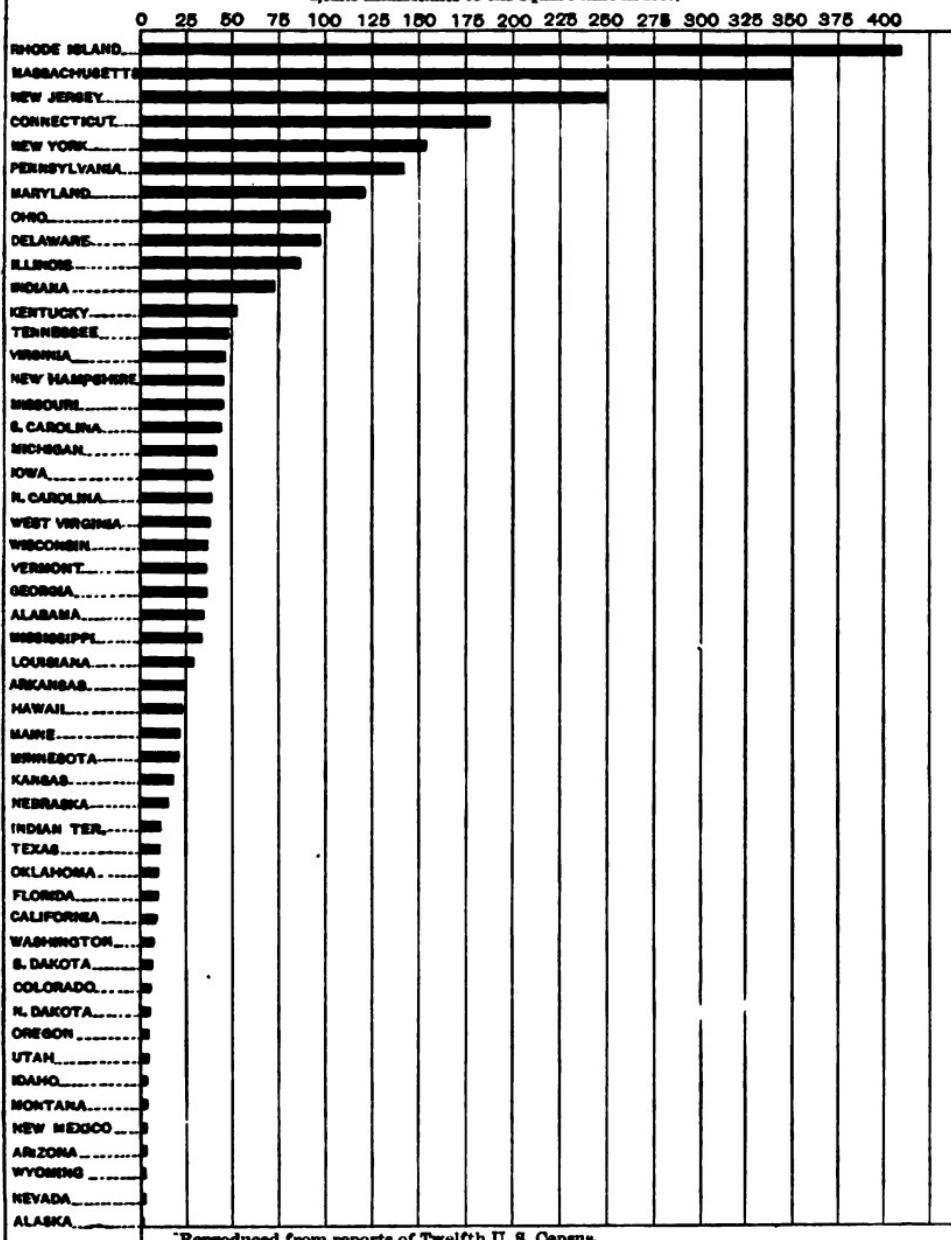
77 per cent in towns over 3,000. Of the other European countries Belgium and Holland alone slightly exceed the general average for the United States, while that of Germany is about the same, and that of France somewhat less.

Within the cities themselves the concentration differs in various quarters in almost as marked a degree as it does in the different parts of a country. The business sections have chiefly a day population, the fine residential quarters a comparatively low density, the crowded slums an exceedingly high concentration. Although the recent application of electricity to transportation has enormously extended the suburban area, there are still sections where the congestion in the centres increases from year to year, seemingly unaffected by rapid transit. In the tenth ward of New York, for instance—the most densely populated area of the civilized world—the numbers per acre which amounted to 524 in 1890 rose to 670 in 1904; while according to the census made by the Tenement House Department several blocks had a density of over 1,000. Compared with these, the highest European figures seem insignificant: Josefstadt in Prague, 485; Bonnenouvelle in Paris, 434; Bethnal Green North in London, 365.

When we reflect that in the United States as a whole over a third, and in several states two-thirds or three-fourths, of the people now live in cities, and when we notice that the progress of agglomeration is unabated, it is apparent that as a result of the changing economic conditions the problems of the national life of the future are to be in great measure city problems. These, however, are largely social and political. So far as they are economic in character they fall principally under such heads as the influence of city rents on the cost of living and rate of wages, the effects of concentration of labor and capital on production and distribution, and the consequences of urban growth upon depopulation of the rural districts and the scarcity of farm labor. Some of these will be discussed later.

**NUMBER OF INHABITANTS TO THE SQUARE MILE,
BY STATES AND TERRITORIES, 1900.**

NOTE—This diagram does not include the District of Columbia, which had 4,645.3 inhabitants to the square mile in 1900.



Reproduced from reports of Twelfth U. S. Census.

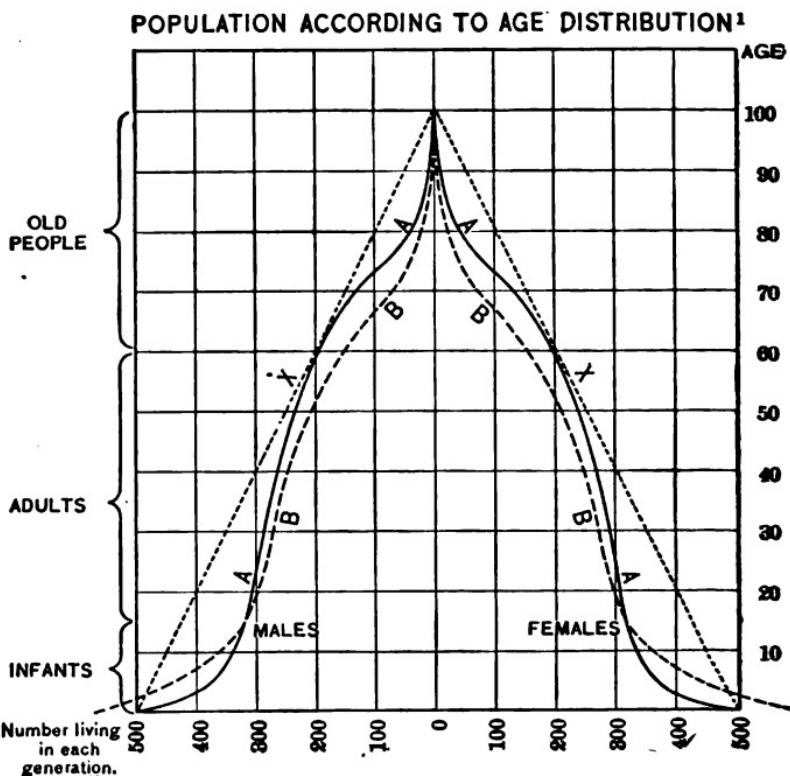
23. Distribution of Population.

The other facts of distribution of population which have important economic bearings are those of sex, age and occupation. The percentage of females affects the labor market to the extent that women are wage-earners, while a considerable predominance of either sex not only influences marriage and fecundity but exerts an effect on social life in general. Under normal conditions in modern times there is a slight excess of females, in Europe about 1,064 females to 1,000 males. Although the birth rate of males exceeds that of females, there is generally a greater mortality among males, due in part to their more dangerous occupation, in part to their more unregulated life. In less civilized older countries there is usually an excess of males, owing in all probability to the fact that more of the arduous labor there falls to the lot of the women. In new countries like America there is also a slight excess of males, ascribable chiefly to immigration, the percentage being 51.2 males to 48.8 females. The contrast between the older and the newer sections is marked, Massachusetts having an excess of females (51.3 per cent) while Wyoming has only 37.1 per cent. That the causes affecting distribution by sex are largely economic is shown by the fact that in industrial and commercial centres, whether American or foreign, where the hard work and nervous strain fall chiefly on the men, the preponderance of females is always accentuated.

Distribution by age has important social and political aspects, especially as affecting the school, the voting and the military population.¹ For economic purposes, however, the chief classification is that of the working population. Although the proportions of the productive classes vary considerably according to the conditions of child labor, the commonly accepted limits are 15 and 65 years respectively. As has often

¹ Of the seventy-six millions of people in the United States in 1900, twenty-six millions, male and female, were of the school age (between 5 and 20), twenty-one millions, male, of the voting age (over 21) and sixteen millions, male, of the militia age (18 to 44).

been pointed out and as is illustrated by the chart below, the distribution by age may normally be compared to a pyra-



Triangle X X represents an imaginary population completely stationary, increasing annually by a constant number of births and decreasing by an equal number of deaths distributed in a precisely equal degree among the various age groups.

Figure A A represents a population about stationary, with a low birth rate, a low death rate and with little immigration or emigration.

Figure B B represents a population with a high birth rate, a high death rate and much emigration.

American conditions would be represented by a combination of the upper part of A and the lower part of B, making the curve look like a top.

mid, with the infants at the bottom and the aged at the top. Where population increases rapidly, the base is broad; where it increases slowly, the base is narrow and the upper part of

¹ From Levasseur, *La Population Française*, Vol. II (1891), pp. 257-260.

the pyramid representing the older classes, bulges out, making it bell-shaped. Similar results are caused by migratory movements. In the case of a large immigration the middle-age classes expand and the curve may be compared to a top ; in the case of emigration the curve sinks in the middle and looks like a spindle. It is owing chiefly to this fact that in the industrial states as well as in the urban centres, the curve is like a top, that is, with the largest proportion of productive classes. The difference between industrial and non-industrial states is illustrated in the following table of distribution by ages arranged by percentages :

Years	0-15	15-65	65-
United States	34.30	61.66	4.04
Massachusetts	27.36	67.54	5.10
South Dakota	39.32	58.57	2.31

Massachusetts had almost ten per cent more of the productive classes than South Dakota. A similar lesson is enforced by foreign statistics.

Distribution by occupation naturally follows very closely the utilization of the economic resources. Comparative statistics of different countries would therefore be meaningless. In the United States the tables on page 56 show the great increase in the industrial classes, and throw an interesting light on the relative importance of the various industries from the point of view of distribution of the population.

24. Increase of Population.

The increase of population is normally dependent on the existence of marriage. To the children born in wedlock must however be added the illegitimate births, which form in different countries from 3 to 14 per cent of the whole. In some large cities like Paris the percentage is as high as 24, and where, as formerly in Bavaria, especially severe marriage laws

exist, the percentage is even higher. The proportion of single persons over 15 years varies from 30 to 50 per cent in different countries, the percentage in America being 40 for men

PERCENTAGE OF DISTRIBUTION OF POPULATION IN THE UNITED STATES BY OCCUPATIONS.

	1880	1890	1900
Agricultural pursuits	44.3	37.7	35.7
Professional service	3.5	4.1	4.3
Domestic and personal service	19.7	18.6	19.2
Trade and transportation	10.7	14.6	16.4
Manufacturing and mechanical pursuits	21.8	25	24.4

NUMBER OF PERSONS ENGAGED IN VARIOUS OCCUPATIONS IN 1900.¹

Carpenters and joiners	600,252
Dressmakers, seamstresses and milliners	585,685
Steam-railroad employees	582,150
Miners and quarrymen	563,866
Iron and steel workers	290,611
Machinists	283,145
Painters, glaziers and varnishers	277,541
Cotton-mill operatives	246,004
Tailors and tailoresses	229,649
Blacksmiths	226,477
Engineers and firemen (not locomotive)	223,495
Boot and shoe makers	208,912
Saw and planing-mill employees	161,624
Masons	160,805
Printers, lithographers and pressmen	155,147
Tobacco and cigar operatives	131,452

and 31 for women. If, however, we more properly take the people between 40 and 60 years as the class that one would usually expect to see married, we find that the single persons constitute only 12 to 15 per cent of the whole. In the American cities the proportion of single persons is larger, owing

¹ Exclusive of merchants, clerks, draymen and agents.

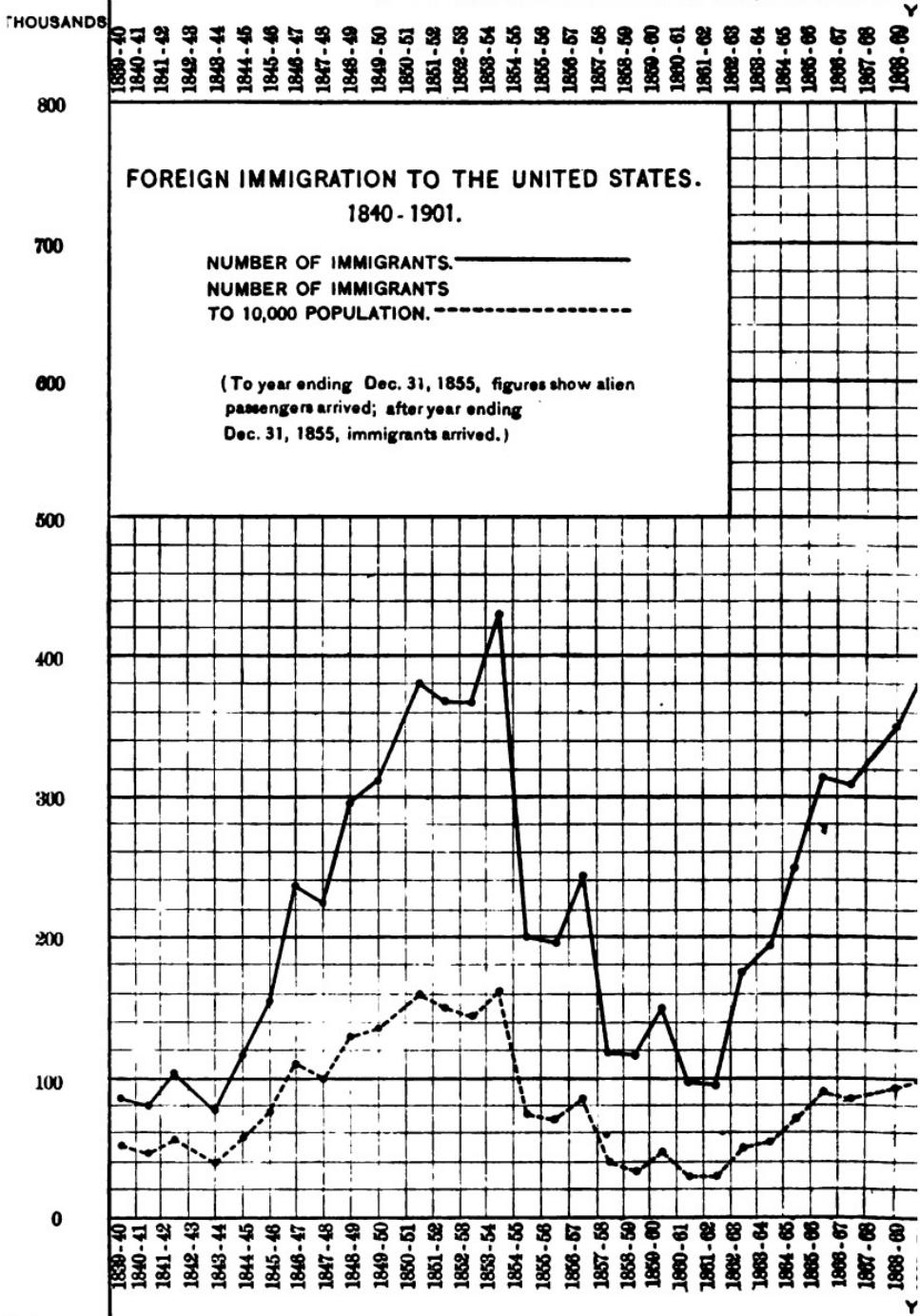
partly to the postponement of marriage and partly to the large immigration of young unmarried persons. The normal marriage rate in most countries varies from 14 to 18 married persons annually for each thousand of the population, with considerable variations due to general economic conditions. Periods of depression, for instance, naturally diminish the predisposition to marriage, while on the other hand when the conditions for the employment of women are favorable, as in some of the New England towns, the marriage rate is exceptionally high.

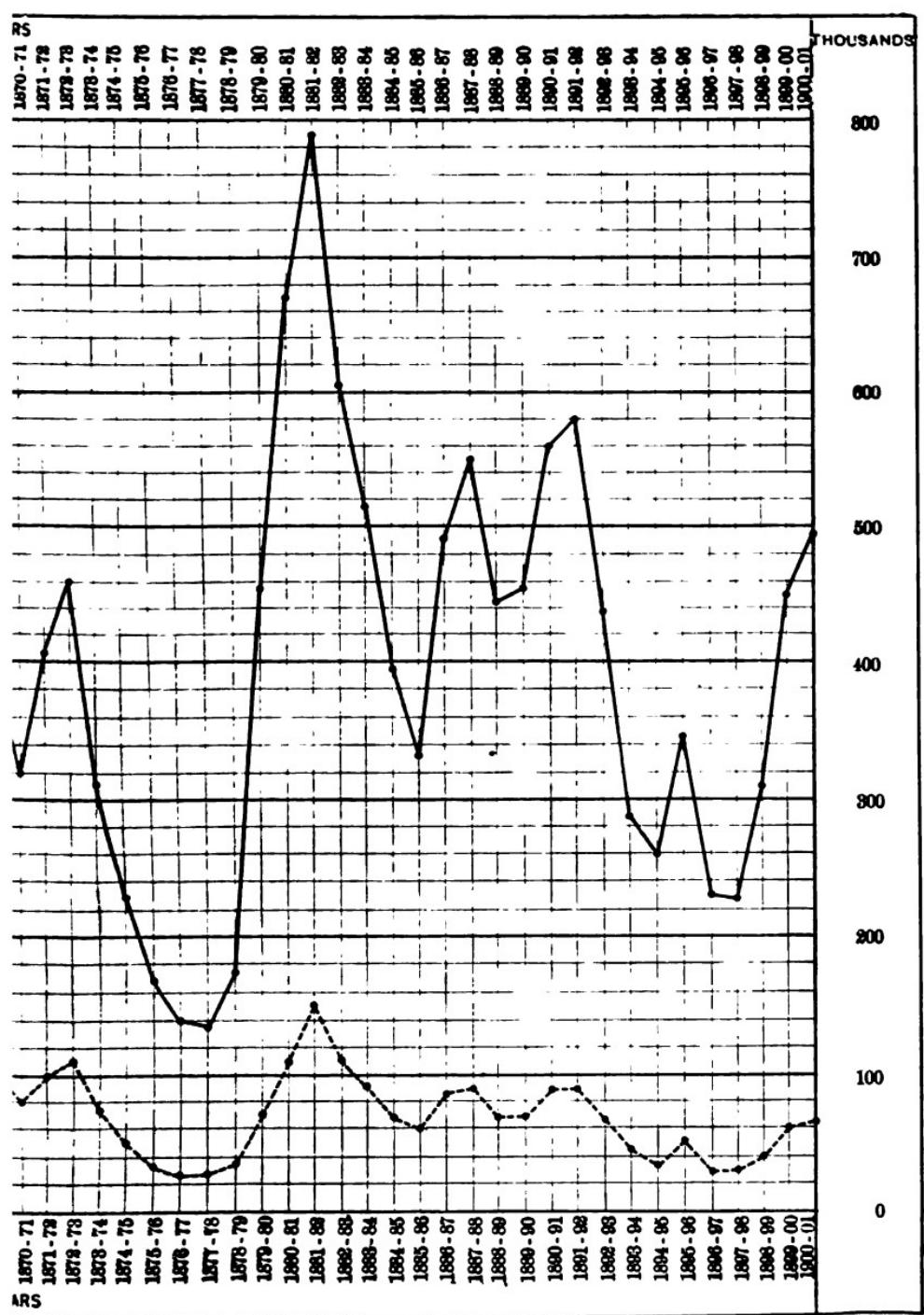
Of almost more importance than the frequency of marriage is its fecundity. When we compare the number of births with the population as a whole, we speak of a crude birth rate; when we compare the births with the number of women of child-bearing age (15 to 50 years), we speak of a refined or corrected birth rate. The average number of children to a family varies in different countries from 3 to 5. In the same country the fruitfulness depends not only on color and nationality, as in the United States, but also on social and economic conditions, according to the sway of prudential considerations. It is a notorious fact that the greatest fecundity is found in the poorer classes. It is now also well established that birth rates, like marriages, differ at present in cities of the same size according to the prevailing industry or occupation. The birth rate per thousand of the population as a whole ranges from the exceptionally low figure of 22 in France to almost 50 in Russia and India. In the United States it is above 35, but falling rapidly in the Eastern states. In large parts of New England, in fact, the birth rate of native parents is lower than in France, so low indeed that were it not for the far greater fecundity of foreign parents there would be less births than deaths.

The increase of population depends, as has just been intimated, not only upon the birth rate but upon the death rate. It makes a great difference to social progress whether a slow increase of numbers is due to the one or to the other cause. Whatever may be the conclusion as to the desirability of a low

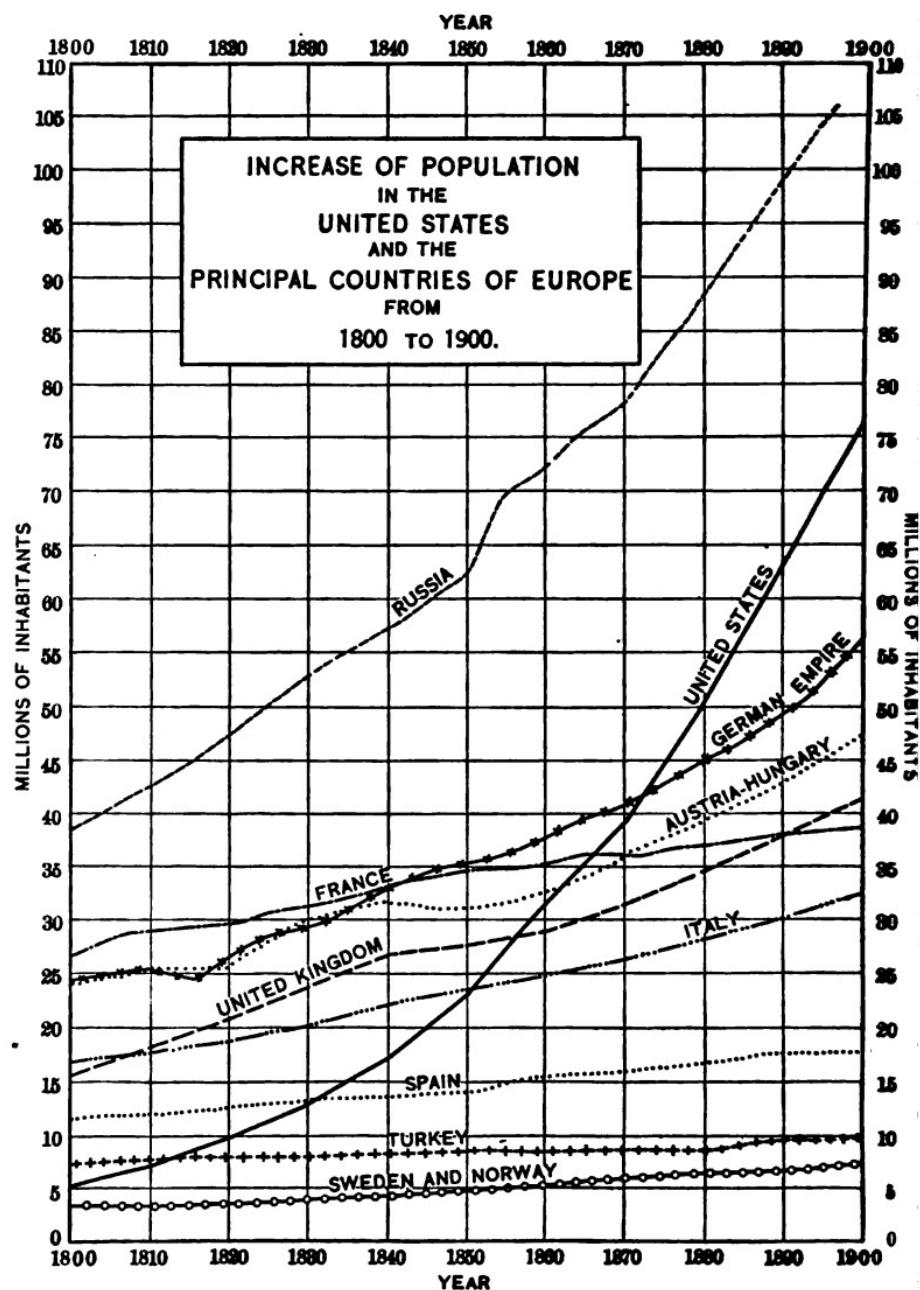
birth rate, there can be only one opinion as to the undesirability of a high death rate. In modern times, at least, civilization endeavors in every way to arrest mortality and to prolong human life.

It is quite unnecessary to fortify by statistical data the familiar fact that deaths vary according to seasons, age and sex. In hot countries the summer, and in cold countries the winter, are the most dangerous; in all places infant mortality is by far the greatest; and almost everywhere the male death rate slightly exceeds the female. In making comparisons we must again observe the distinction between the crude and the refined rate. The ordinary basis is the number of deaths per thousand of the population. Since, however, the rate varies with sex and age, the comparison is accurate only when made as between the same proportions of sex and age. A rate reduced to such proportions is called the refined or corrected death rate. Otherwise a country with a relatively larger number of children would have a higher death rate. For general purposes, however, it has been found that the results of computing according to the crude or to the refined death-rate method do not differ sufficiently to change the relative standing of countries. In the American statistics still further accuracy is sought by correcting the death rate for race as well as age distribution. Using the crude figures, the normal death rate in modern communities now varies from 17 to 21 per thousand, the former being the figure for the United States in 1900. In the cities it is considerably higher than in the country, the rural rate sometimes being as low as 14 or 15, and the urban rate occasionally ascending in unhealthy American cities to 35 or even 50. The death rate has been markedly reduced in recent times by the progress of science in controlling disease, by the growing infrequency of war, and by the economic changes which have virtually eliminated famine, except in relatively backward countries like Russia and India. The greatest improvement, however, has taken place in the urban death rate, owing to the immense strides in modern sanitation,





From Report of Industrial Commission Vol. XIX.



From Reports of Twelfth U.S. Census, Statistical Atlas.

food and milk inspection, housing improvement and park development. Within a century the death rate of Vienna has fallen from 60 to 23; within twenty-five years that of London from 50 to 25; and within half a century that of New York from 32 to 20. In fact, selected cities in certain countries now show a death rate even lower than in rural districts.

25. Migration of Population.

The final factor which affects changes in the population is migration. Internal migration from place to place as well as from occupation to occupation is the chief manifestation of the modern mobility of labor. In former times custom, caste, settlement laws and the like interposed serious obstacles to such movement. Now, under the pressure of the economic motive, population shifts with opportunities of bettering one's condition. Migration between countries assumes the form of emigration and immigration. While immigration swells the population of new countries, emigration only rarely diminishes the population of an old country; for the gap caused by the emigrants is soon filled by the results of an increased birth rate due to the improved opportunities at home. Ireland is for special reasons a striking exception.

Where people emigrate to places under the control of the mother country they form colonies. Colonies, however, are not only colonies of occupation, to afford an outlet for surplus population, but also colonies of exploitation, to furnish a vent for surplus production of commodities. In modern times we may even speak of a third kind of colonies like those of the United States, where the aim is neither emigration nor exploitation, but rather the political and economic elevation of the indigenous population.

If we assume with the anthropologists one original habitat for the human race, practically all populations are composed of immigrants or descendants of immigrants. Formerly the migration was one of tribes or nations; now it is one of individuals. In the older civilizations these wholesale

immigrations even of individuals have long since ceased. In countries like the United States, however, the movement is still in progress on a gigantic scale, probably for the last time in human history. Although the immigration has increased largely for the past half-century, it has not grown appreciably faster than the native population. The foreign born constituted 13.2 per cent of the total population in 1860; and while the proportion rose slightly in the succeeding decade, in 1900 it was again about the same—13.7 per cent. This is contrary to the current opinion, but is none the less a fact. It is clearly shown on the maps and charts opposite pages 58, 60 and 62, which also illustrate the great increase in recent years of immigrants from the South and East of Europe as well as the composition of the population in 1900.

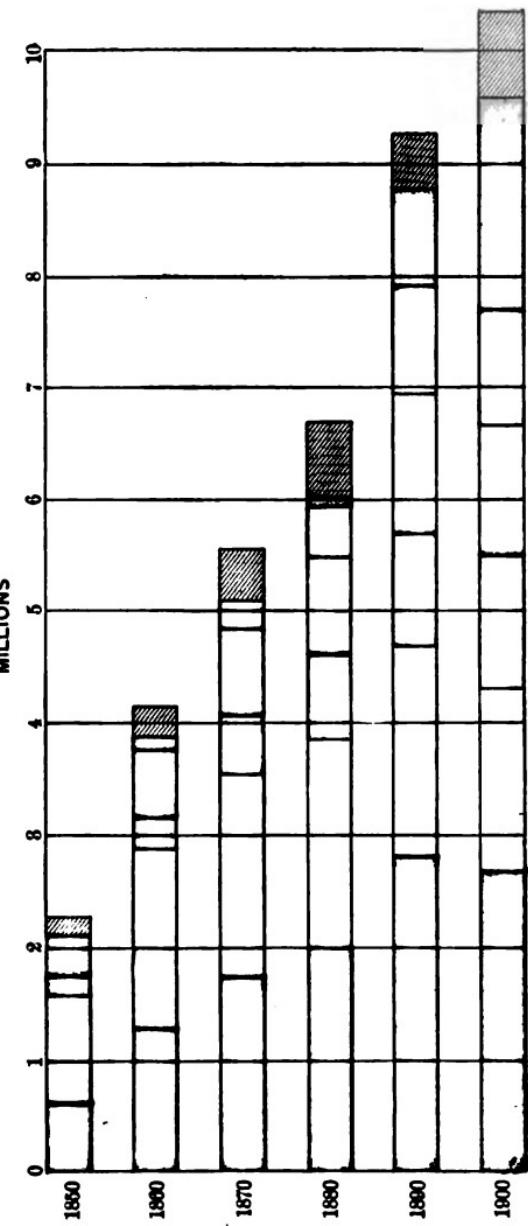
By combining the natural increase with that due to migration we arrive at the total increase of population. Up to the civil war the population of the United States grew slightly more than a third every ten years. Since 1880 the decennial rate of increase has diminished, being about 25 per cent for the decade ending 1890, and about 21 per cent for that ending 1900. Notwithstanding this diminution in the rate of increase, it is exceeded only by Argentina, where the rate is approximately as large as that of America before 1860. In Europe the rate of increase is only about one-half of that of the United States; but while it is falling in the United States it is rising in Europe. On the chart opposite page 59 will be found a statement of the comparative increase of population in some of the more important countries during recent decades.

The excess of births over deaths and the rate of increase in a few typical countries for 1900 are given in the table on the following page.

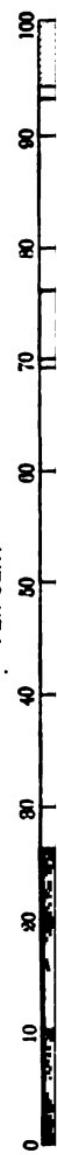
26. The Law of Population.

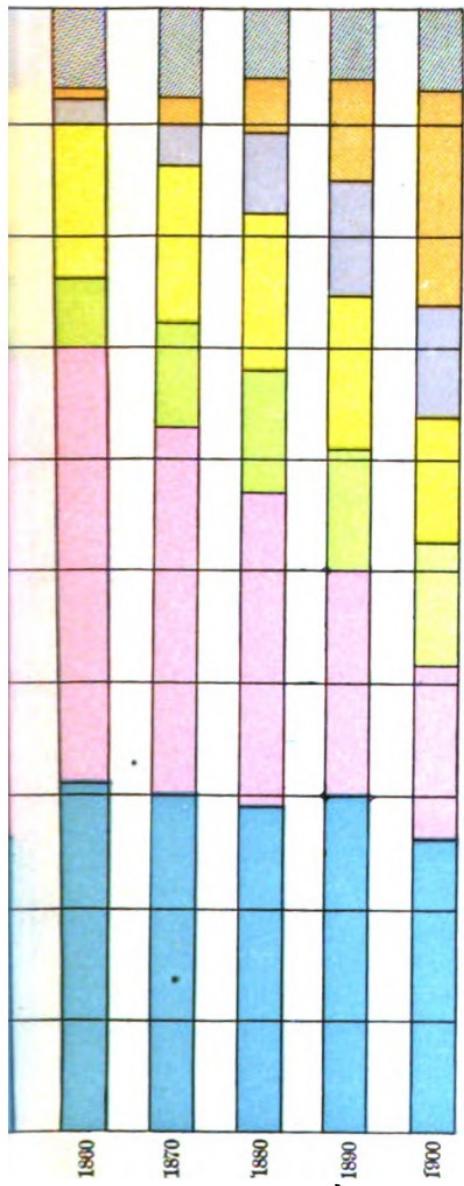
The chief problem in the increase of population is its relation to prosperity. The so-called law of population, as framed by Malthus at the close of the eighteenth century, asserts that

1. TOTAL FOREIGN BORN AT EACH CENSUS WITH THE NUMBER OF EACH LEADING NATIONALITY: 1850 TO 1900.



2. PROPORTION WHICH EACH OF THE LEADING NATIONALITIES BEARS TO THE TOTAL FOREIGN BORN AT EACH CENSUS: 1850 TO 1900.





- NORWAY. SWEDEN, AND DENMARK
- EASTERN AND SOUTHERN EUROPE
- ALL OTHERS
- GERMANY
- IRELAND
- CANADA AND NEWFOUNDLAND
- ENGLAND SCOTLAND AND WALES

From Reports of Twelfth U.S. Census, Statistical Atlas.

there is a tendency of population to increase faster than the means of subsistence, and that this pressure of population on food, unless removed by preventive agencies, will lead to the positive checks of misery, vice and crime, by which alone the

	Birth Rate.	Death Rate.	Excess of Births.	Per cent of Decennial Increase.	Population (omitting 000).
United States . . .	35.1	17.4	17.7	20.7	75,994
England and Wales	30.1	18.4	11.7	12.1	32,526
Germany	36.2	22.5	13.7	16.2	56,367
France	22.2	21.6	0.6	1.7	38,590
Italy	35.5	24.6	10.9	7.2	32,475
Hungary	40.5	30.3	10.2	10.3	19,254

equilibrium will again be restored. Three conclusions were drawn from this doctrine, applicable respectively to socialism, to wages and to economic progress.

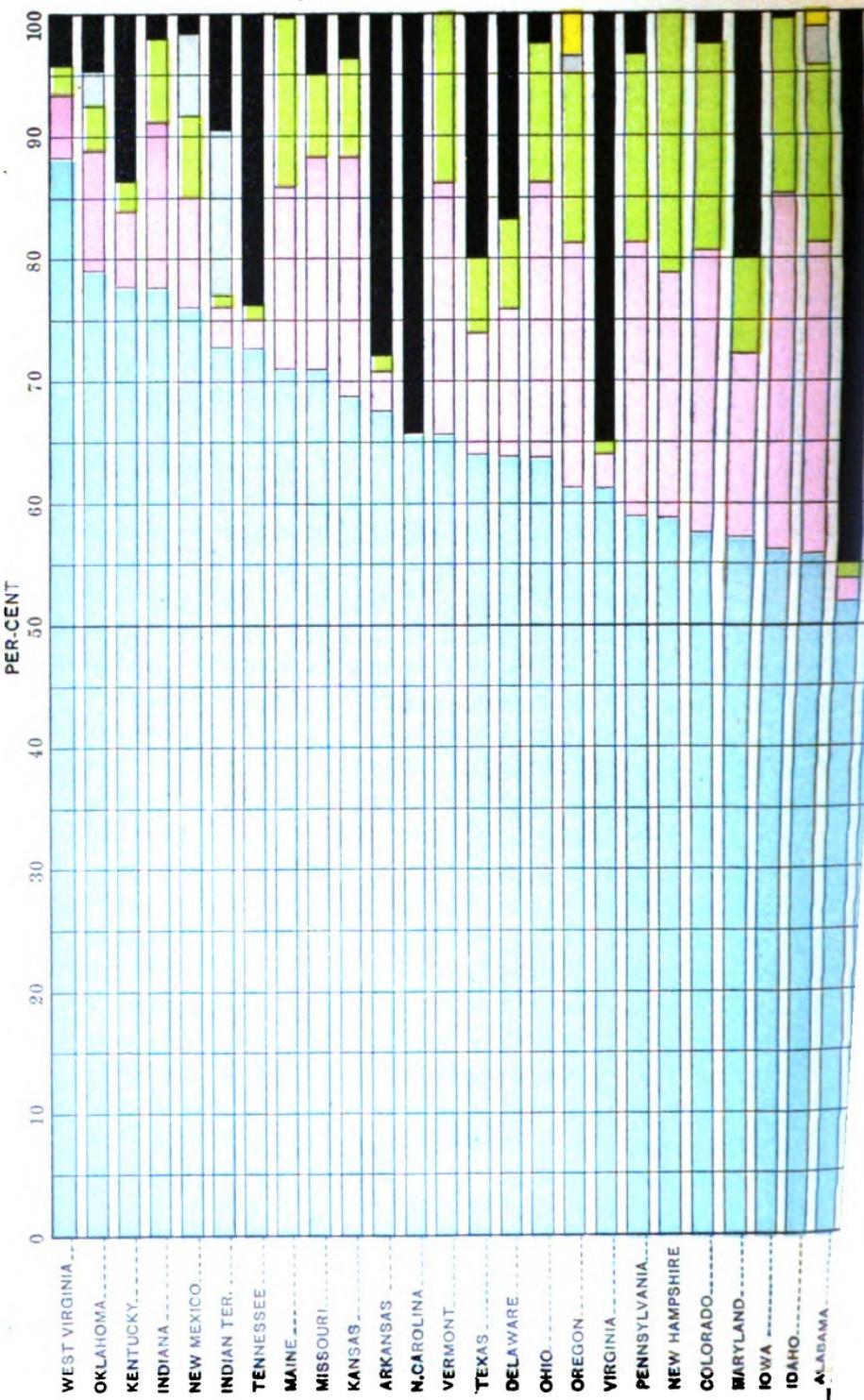
(1) The first point is the one which originally set Malthus thinking. Some of the French idealists and their English followers had been advocating equalitarian or communistic schemes of social regeneration. Malthus contended that the pressure of population on subsistence would effectually preclude any such ideal consummation. (2) Again, although this came somewhat later, it was claimed that wages depend upon demand and supply, and that it was therefore hopeless for the laborers to expect more than a bare minimum wage unless their numbers were checked. (3) Finally, it was asserted that economic progress in general was seriously menaced by the danger of over-population, and it was contended that this could be averted only by the extensive application of prudence and self-restraint,— remedies in the efficacy of which Malthus himself had not much confidence.

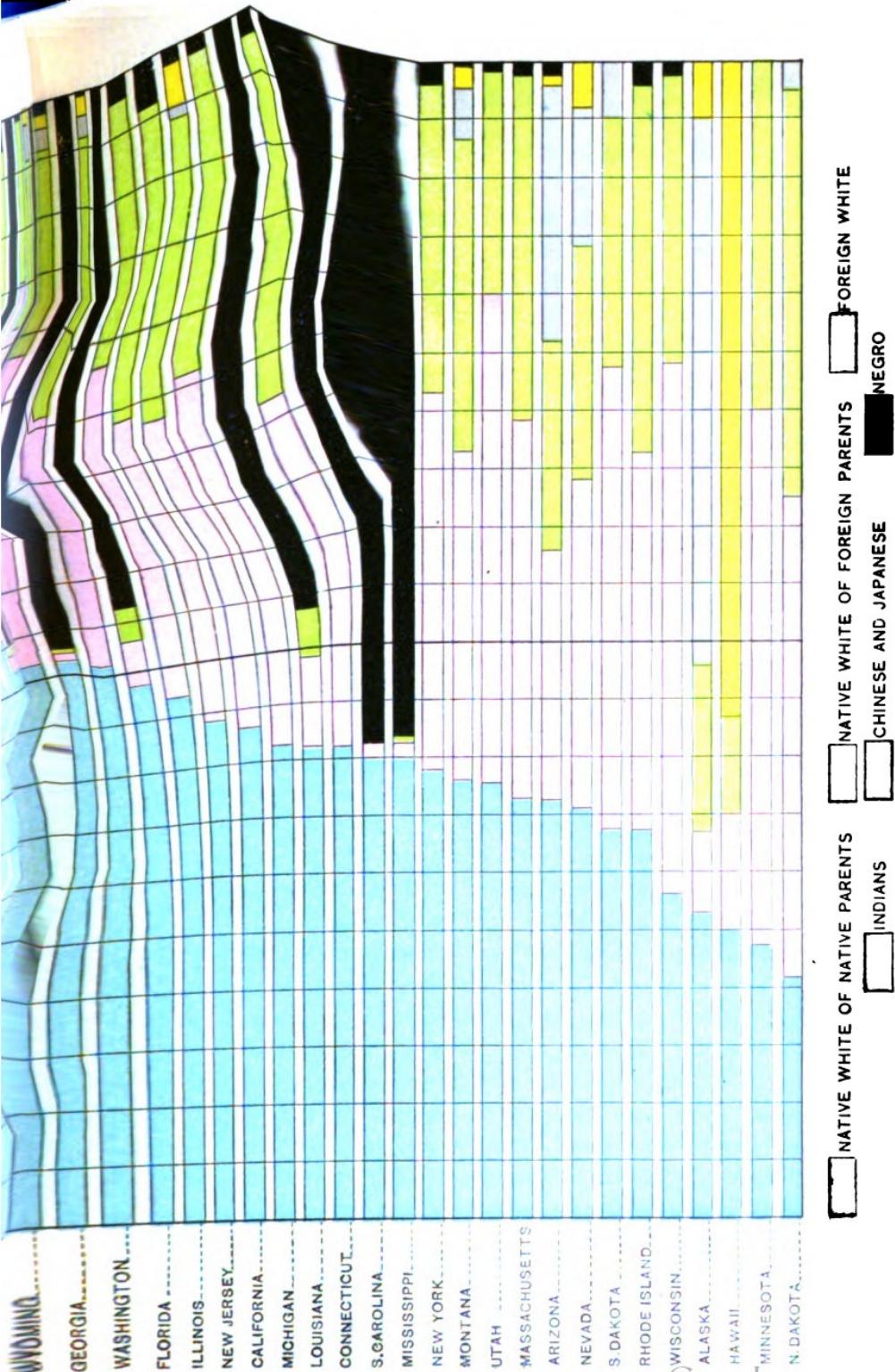
In the original framing of the principle, Malthus maintained that the ratio of increase was at best arithmetical in the case of food, but geometrical in the case of population. While the accuracy of these ratios has been successfully disputed, it still

remains a question as to whether population really tends to increase faster than food. So far as food is concerned, there is no doubt that there are definite limits to its increase, even though these limits are more elastic than were originally thought. The area of cultivation may be extended, improvements of all kinds may be applied, hitherto unsuspected forces of nature may be utilized; but in the end, as we shall see, the law of diminishing returns, which was not at first thought of by Malthus, will make itself felt.

With reference to population, however, two considerations have been advanced to offset the contentions of Malthus,—the biological and the socio-economic arguments. The biological argument asserts that the power of reproduction itself diminishes with more complex and civilized beings, and points to the small families of the higher classes and to the increasing sterility of the New England women. This argument, however, is by no means indisputable; and it is above all uncertain whether the diminishing ratio is natural or artificial,—that is, whether or not it is a result of volition. The socio-economic argument claims that, as a consequence of general social as well as economic reasons, the size of families varies inversely with wealth, and thus keeps down the ratio of increase. With the poorest classes every child is regarded as a prospective bread-winner, and to that extent not only a help in the near future but an additional support for old age. This leads to early and often improvident marriages and large families. In the next stratum of society the demands of education and of the maintenance of a social position induce more deliberation in marriage, and effectively bar the probability of so numerous a progeny. Finally, where wealth is abundant, the desire carefully to train a few rather than to half train many children, as well as the wish to escape the nervous strain of a numerous offspring, conspire to restrict the number of children. The French peasant is not so different from the average American or European resident of a large city. The economic motive may be slightly stronger with the former, the other social

CONSTITUENTS OF THE POPULATION OF STATES AND TERRITORIES: 1900





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motives slightly stronger with the latter; but in essence they are alike. Here again, however, the argument is not anti-Malthusian; for the phenomena just described are the results of prudential considerations, and really fall under the head of the preventive agencies mentioned by Malthus.

It might seem, then, that Malthus was right in his premises; and since the preventive considerations are proverbially weak in the poorer classes, it might be claimed that he was also justified in his gloomy forebodings. This conclusion, however, does not follow. The real antithesis is proximately at least not between population and food, but between population and wealth, or productive efficiency. Through a proper organization and utilization of improved methods, production of wealth in general may be so augmented as to permit an increase both in population and in prosperity. This has happened, for instance, all through the nineteenth century, even in the older countries of Europe; the industrial revolution has not only multiplied national wealth, but has greatly increased population, while reducing misery, vice and crime. It might be contended, indeed, that this is exceptional, because the increased numbers have after all been dependent ultimately upon the food supply which they have secured from the newly opened areas of North and South America; and it might be added that the population of these countries is increasing so rapidly that sooner or later they also will have no surplus food to export. Even granting this contention, however, and looking forward to the distant time when all the huge and now uncultivated areas of the earth's surface will be utilized for food production, it still remains true that the increase of wealth may for almost indefinite periods keep ahead of population. For, as was intimated in the last chapter, a really intensive capitalistic system of agricultural production has never yet been attempted on a large scale. If there is enough wealth to put into the soil, it can be transmuted into food. The diminishing returns from land can be arrested by the increasing returns of a rapidly augmenting efficiency of industry

in general. The food may indeed cost more, but there will be more wealth with which to buy it.

Not only can wealth be made to increase faster, but, as we have seen, the increase of wealth will in itself set in motion those economic and sociological forces which tend to reduce the rate of increase of population. Thus from both sides the antithesis of wealth and population may be weakened. Under favorable conditions population may increase gradually, and wealth rapidly.

It is clear, however, that these favorable conditions include those of distribution as well as production. The communists against whom Malthus wrote were mistaken, but not for the reason alleged by him. They thought that a mere change in the distribution of wealth would suffice to bring prosperity. They failed, just as the socialists of to-day still fail, to realize that even an ideal distribution is valueless without enough to divide, and that their schemes would dangerously impair productive efficiency. On the other hand, the wages-fund doctrine of the English classical economists erred, as we shall learn, chiefly in that it overlooked the connection between wages and production, and took no account of the fact that, given a greater productive efficiency, more workmen and higher wages are perfectly compatible.

The problem of population as a whole is, then, not one of mere size, but of efficient production and equitable distribution. That is, it is a problem not of numbers alone but of wealth. Since man is the chief labor force, large numbers indeed, other things being equal, mean greater national strength and power. But the reverse may be true if other things are not equal. A small nation with greater productive efficiency, like England, will outrank a more populous country, like India. Smaller numbers with a fairly equitable distribution of wealth are preferable to a dense population living in the extremes of misery and opulence. Mere numbers are therefore not the vital point. The world has alternated in its opinion and action. In classic antiquity, where the absence of advanced industrial

methods soon set a limit to production, over-population was a real danger, tempered first by emigration and then by infanticide. In the middle ages population was sparse, and yet, because of undeveloped production, kept down by famine and disease. With the growth of enterprise in the fifteenth and sixteenth centuries, increase of population was favored but not always secured. The conditions at the close of the eighteenth century seemed to lend color to the fears of Malthus; but for well-nigh a century the concern in the advanced industrial countries has been not of an unduly rapid but of an unduly slow increase of population, until in France to-day it has become a problem not of excessive fecundity but of race suicide.

The doctrine of over-population has therefore lost its terrors for modern society. The stress has been shifted from food to wealth and efficiency. Productive efficiency, however, depends not only upon character and education, intellectual, industrial and ethical, but also upon social organization and economic methods. The problem of population, in short, is to-day a part of the broader problem of the production and distribution of wealth. In this sense it is a result rather than a cause. If we increase productive efficiency and secure an approach to distributive justice, population will adjust itself to the new conditions either by increasing automatically up to the level of comfortable subsistence or by being voluntarily kept down to that level.

Book II.

Development of Economic Life and Thought.

CHAPTER V.

THE ECONOMIC STAGES.

27. References.

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28. Economic Development.

Inasmuch as economic life is many-sided, it is not easy to single out the fundamental characteristics of its development. Most of the current explanations err in one of three ways:

some mistake the accident for the essence ; some are so incomplete as to be of little real use ; some are so general as to be either vague or inadequate.

(1) Of the first class a good example is the division into the three periods of barter, money and credit economy. In the first period men exchanged their superfluities through the medium of barter alone ; in the second period money was invented to facilitate trade ; in the third, credit was devised to supplement the money supply. All this is true enough, but does not go sufficiently deep. It does not show which is cause and which is effect. It does not tell us why these transitions occurred, nor explain the basic changes in the industrial organization of which these transitions are only the outward forms. Of much the same character is the division of economic life into the three stages of the animal, the vegetable and the mineral economy. In the first period, we are told, men lived primarily on the results of the chase ; in the second, on the fruits of the earth ; while, in the third, science is continually expanding the scope of chemical substitutes for animal and vegetable food. It is obvious that even if this statement were correct, it would not make clear the fundamental facts of economic organization.

(2) The second class of explanations comprises all kinds of half-truths or statements which while true in themselves are incomplete. In this category belong Maine's famous law that the world has progressed from a condition of status to one of contract, and Spencer's law of the evolution from militant to industrial society. Of a like nature is the assertion that the world has gone through the stages of slavery, serfdom and free labor ; or that it has advanced from common to private property, or from bimetallism to monometallism, or from custom to competition. All such statements may be true and even serviceable within a limited field, but for the purpose of disclosing the real inwardness of general economic progress they are of minor importance.

(3) The most conspicuous illustration of the third class of

explanations is the venerable classification into the five stages,—the hunting, the pastoral, the agricultural, the commercial and the industrial stage. This description, however, is both inaccurate and vague. Not only is hunting not the first stage, but the sequence of the stages is not necessarily the one mentioned. Moreover, the generalization is too broad to afford much help in the explanation of modern conditions. Rome is supposed to have gone through these stages, and yet the later Roman civilization differed in fundamental economic respects from our own. A version of economic history which would throw imperial Rome and modern England into the same category is manifestly too broad to be serviceable. Of a similar character is the division of economic life into the stone, the bronze, the iron and the steel age. The iron age covers so many heterogeneous forms of economic civilization that the classification is useful chiefly for archæological purposes.

Before proceeding, however, to give the more modern explanation of economic progress, it may be wise to dwell for a moment on the last two classifications which, when correctly put, still possess a certain use for the early periods of society.

29. Primitive Technique.

(1) At the outset and for a long time, man, like his simian ancestor, lived on wild berries, nuts, roots and herbs. He roamed about, as do some of the Australasians to-day, in small groups of twenty to fifty, in alternating periods of plenty and want, according to the season or the fortunes of the weather. Each group was for the purposes of the food supply entirely independent. Primitive man, however, as the physical conformation of his teeth and jaws shows, was not only herbivorous but carnivorous. When geographical reasons favored, he varied his diet by fishing, and in many cases he practised cannibalism, not only on his enemies, but also on the old and useless members of his own social group.

(2) The root-grubbing period was, we shall not say succeeded, but rather supplemented, by the hunting stage in

certain portions of the world where game was abundant. This, however, presupposes a certain technical development. Man is distinguished from his prey primarily by the use of weapons and tools. The history of civilization is very largely the history of technique. There was at first no distinction between weapons and tools. The weapon was the only tool for both defence and offence. The earliest weapons consisted of objects ready at hand, — wooden sticks, animal bones, tusks and teeth, pieces of stone.

(3) The combination of these was one of the great steps in advance. It changed the primitive club or missile into a moderately effective weapon. The affixing of a flint to a stick, or the fastening of jagged teeth to pieces of wood by wisps of grass or strips of hide or catgut were the first triumph of human ingenuity. The bone and the stone age lasted for countless generations. In the course of time implements were found serviceable not only for warfare but for the saving of toil ; in other words, by the side of the weapon we find the tool. In this transition perhaps the mightiest factor was the utilization of fire. What was a terror to brute creation became a servant to man. Originally obtained from a chance conflagration, the spark of fire was zealously guarded, and was soon invested with sacred attributes. In some cases it even became the basis of the religion itself. Although we find savage races to-day who understand the secret of creating fire by friction, the easier method was to ignite the brand from the ever-burning flame. The chief function of the vestal virgins in Rome was to keep the perpetual fire ; and in the Catholic church to-day with its never-extinguished light we have the last survival of what was once a fundamental social custom.¹

(4) Fire was utilized not only for purposes of warmth, but

¹ The testimony given before the New York gas commission in 1905 affords another curious illustration of the survival of this custom. One of the officials stated that whenever the location of the gas works is changed, the fire is transferred by a brand from the old to the new building. Under no consideration would a new fire be started.

also for the better preparation and conservation of food, thus making man less dependent on his immediate surroundings. From that time on, although environment still makes the man, man to an ever-increasing degree succeeds in changing the environment. The most signal service of fire, however, was in the improvement of tools. Its uses became most marked when metals were employed. Even the tools of wood and stone, however, were greatly improved thereby. So slow was the development that it took countless centuries for the old stone or palæolithic age to change into the new stone or neolithic age. We find flint weapons at least a million years old. During this transition man had learned to rub, to sharpen, to bore, to cut, to plane and to polish the bones and stones so as to produce arrows, knives, javelins, hammers, millstones, daggers and saws. In all this he was simply imitating the experience of parts of his own body : in the saw we have the improved tooth, in the hammer the strengthened fist, in the scoop the enlarged hollow of the hand, in the hook the crooked finger, in the javelin the lengthened arm, in the knife the sharpened nail. Hand in hand with this went the invention of the earliest utensils. From the animal's horn to the beaker, from the hollowed wood to the osier basket, from the natural gourd to the artificial jug, does not seem so great a step. Yet the invention of pottery has been deemed by some so important as to constitute a revolution in human civilization. Weapons, tools, utensils, — these typify the onward march of the human race ; they are the outward technical manifestation of man's intellectual progress and the physical basis of his economic development.

(5) From the purely technical point of view the stone age was succeeded by that of metal. Without the use of fire for smelting this would of course have been impossible. Archæologists not so long ago thought that the copper and bronze ages everywhere preceded that of iron. This can, however, be accepted only with qualifications. It now seems probable that the rougher forms of iron were utilized before bronze was

invented. In certain countries we find no bronze age at all, because of the lack of one or both of the constituent components, tin and copper. In the civilizations that grew up about the Mediterranean, however, first copper and then bronze drove out the primitive and rougher iron implements, until after several centuries the improved extractive processes assured the final victory to the finer iron tools and thus instituted the true iron age. With the advent of this, man's mastery over nature was definitely assured.

30. Transition from the Lower Stages of Civilization.

It is obvious that metallic weapons and implements would be of the greatest service to both hunters and fishers, and in truth we find some of the more advanced hunting civilizations acquainted with the use of rougher iron. But the continuance of the hunting stage, as well as the character of its transition to a subsequent stage, depends not so much upon the kind of weapon as upon the conditions of nature and the relations of population to the land. Under certain circumstances where game began to become scarce, it was discovered, at first by mere accident, that a less precarious food supply could be secured by preserving various animals and caring for their increase, rather than by devouring at once the entire product of the chase. The domestication of animals was a discovery of momentous import, and with their multiplication first for food, then for transport, and finally for clothing, protection and pleasure, we have the conditions for the transition to the pastoral stage. Although this is often called the nomadic stage because of the perpetual shifting of the community in quest of fresh pasture, the term is badly chosen, because there is on the whole less nomadism than in the hunting age. The chief result of the domestication of animals was the assurance of a permanent, even though an artificial, food supply, or at all events one that depended on the foresight and care of man. Cannibalism disappeared and famines became less frequent. Another consequence was the possibility of supporting a larger

population on the same area. Finally, the permanent possession of cattle became an object of desire, and private property developed on a large scale, with corresponding differences of wealth and of social classes.

It is, however, erroneous to assume that the hunter was necessarily succeeded by the herdsman. In the first place animals capable of domestication were not found everywhere. On the American continent no pastoral life was possible with the llama alone. Secondly, whole stretches of land, both in Africa and in Asia, were unsuitable for grazing purposes. It is only where all the geographical and climatic conditions were favorable, as on the great Asiatic and North African plains, that we find the transition to the pastoral age.

In the same way it is erroneous to think that the herdsman was everywhere succeeded by the farmer. A certain degree of agriculture is often found combined with the hunting or fishing stage. In fact, it is only a small step from the original root-grubbing to primitive agriculture. When, again presumably by accident, it was found that the seeds would multiply themselves, and that the stick was more effective for grubbing than the finger, we have the beginning of the cultivation of the soil. Just as human foresight led men under certain conditions to preserve animals in order to secure an increase, the same quality led them under other conditions to preserve plants. If flock tending is a result of the domestication of wild animals, agriculture is a result of the domestication of wild plants. Because of the temporary patch near the hunter's tent, some, like Morgan, call this system horticulture; because of the primitive tools, others call it hoe culture. Both terms are unfortunate, the one because horticulture (*i.e.* garden culture) at present signifies a very developed form of tilling the soil; the other, because the hoe has even to-day been by no means completely superseded by the plough.

What is reasonably sure is that the primitive tilling of the soil was carried on by the hunters' wives and daughters as a subordinate and auxiliary means of support. It was only at

a much later period that agriculture acquired more importance, and it was not until the game supply had been practically exhausted that the chief reliance was put on agriculture, and the roving life of the hunter gave way to the settled habitation of the farmer. These periods in agriculture may exist, moreover, in connection not only with the hunting stage, but also with the pastoral stage. In fact, the most careful investigators now believe that the domestication of animals was not an achievement of the hunter at all, but of the primitive farmer, and that the pastoral life was an outgrowth of early agriculture. Without a knowledge of all the details, therefore, it is impossible to assert the exact chronological sequence of the stages.

Much the same may be said of the transition to the later stages of commerce and industry. The commercial stage does not necessarily follow the agricultural stage, but often precedes it. In the case of many coast peoples, the fishing and commercial stages appear at the same time, without the intervention of agriculture. And in more developed civilizations, like that of Venice, for instance, we find the pastoral stage develop at once into the commercial stage without reaching the industrial stage.

The time-honored classification of economic progress is thus not only inexact in itself, but of comparatively little service in explaining the great changes that have supervened since the adoption of agriculture. For this purpose a somewhat different line of cleavage seems desirable.

If we regard economic conditions from the standpoint of the relations of production to consumption—for these are the fundamental economic facts—we may divide the world's history into three great stages, known respectively as the self-sufficing economy, the trade or commercial economy and the capitalist or industrial economy. From another point of view these may also be called the isolated economy, the local or village economy and the national economy. These we shall now proceed to consider.

31. Self-sufficing or Isolated Economy.

By this term is meant a form of organization where the economic unit or household produces everything that it needs and consumes all that it produces. In its typical form the household raises the raw materials for food and for clothing, provides its own shelter and works up into finished products everything necessary for its final consumption. What little division of labor exists takes place within the household, and grows only with the expansion of the household's needs. Whether the household is small or large, however, it is always a unit by itself; it has normally no necessary relations with any other unit. Its economic characteristic is its self-sufficiency and therefore its isolation.

This self-sufficing economy assumes many different aspects in the course of history. The economic unit may be either a family or a larger group. It may rest either on slave labor or on free labor. It is the universal form of the beginnings of society, in the root-grubbing or hunting stages, and is always found in the early periods of the pastoral and agricultural stages. It is seen in the frontier life of more advanced communities, for the family of the backwoodsman in the United States is in this respect like the earliest groups known to history. It is found in Greece, where the landed estate was called the *oikos*. It is typified in the Roman *familia*, which is the name for the entire possessions of the Roman citizen, including his wife, his children, his slaves, his land and all his other belongings. It is represented in the manor of mediæval Europe and in the plantation of the American slaveholder. It is found even to-day in the Russian *mir*, or village community, and in some of the Danubian principalities.

Everywhere the distinguishing mark is the self-sufficiency, or home production and home consumption, of the economic unit. It is not a question of slavery, for we find the same economic form in the mediaeval manor resting on serfdom, and in the primitive or still surviving community of freemen.

It is not a question of autocratic power, for we find it equally in the democratic Russian *mir* and the aristocratic American plantation. However different the forms, the essence is the same. The landlord, whether a single person or a group, is the property lord. The estate forms a complex whole. Production is carried on by the group, and there is no sharp line between producers and consumers. The wants of the group members are satisfied by their own labor, and not by that of some other economic unit. As consumers they are no less independent than as producers.

In the course of time, indeed, the households that possess natural or acquired advantages in the production of certain commodities learn to raise a surplus, and trade it off to other groups for various purposes,—at first propitiatory in character, but later in the expectation of securing similar advantages in return. In this way barter develops. But at the outset, and for a long time, there is no barter, because in a typical, self-sufficing economy there is no need of barter. In fact, the exchange of commodities seems wrong because it is unnatural. The propensity to "truck," which Adam Smith considered natural to man, is in reality the outcome of a long evolution. To truck is etymologically to trick, just as barter in its original form (old French *bareter*) means to cheat.¹ Even when exchanges develop, the transactions are always attended by rigid formalities, often invested with a religious sanction.

The fact of exchange between the groups does not necessarily alter the organization of economic life, as long as the great mass of commodities are produced and consumed at home. Thus, for instance, we find in the later centuries of Greek life that many of the estates produced raw materials, and sometimes luxuries, to be sold in the cities which enjoyed an active commercial life. So in Rome during the period of its greatest prosperity, the large estates devoted themselves to some one product,

¹ This meaning has survived in our "barrator," although by a curious development it is now confined to the deceitful shipmaster, or to the cheating and meddlesome instigator of litigation.

like wine or oil or wheat for export, which was carried on by large trading companies. So, again, in the American plantation a single commodity, like tobacco or cotton or sugar, raised for export and handled in the towns, generally constituted the very foundation of its success. It is still true, however, that even in these cases the great mass of commodities used at home was produced at home. While there was trade between the units, there was little if any trade within the units, and while exchanges in the bulk even as between the units amounted to a large sum, they played a small rôle in the daily life of each household. Just as the plantation and not the towns gave the imprint to the civilization of the South, so the *mir* and not the cities typify the Russian economic life, so the estates and not the commercial companies shaped the history of republican Rome. In its essence the economic unit was still predominantly self-sufficing. Even where there is a surplus production for the market, the consumers within the group are in an overwhelming degree dependent on the exertions of the group.

With the growth of commercial intercourse both within and between those early economic groups, the self-sufficing character of the unit begins to disappear, and there is gradually ushered in the next stage of economic life.

32. Trade or Commercial Economy.

The characteristic feature of this stage is the fact that production is no longer followed directly by consumption, but that there is interposed the process of exchange. The demand of consumers is now met primarily through the medium of trade or commerce. The significance of trade does not arise from the fact that there is trade between the units, for, as we have just seen, we find such trade in the later stages of the isolated or household economy. But we now have trade within the unit. The members of the household no longer, as before, produce what they need, but primarily produce what others need. We now have separate classes of producers and separate classes

of consumers. Men for the most part no longer consume their own products, but the products of others which they secure through trade. In other words, instead of the self-sufficing economy we have the trade or commercial economy.

The unit of economic life, although broader than before, still remains local in character, and the trade and industry are largely centred in the villages. Hence we also speak of it as the local or village economy. We can study this stage most clearly in mediæval history. The eleventh and twelfth centuries witnessed an immense impetus given to commerce, due chiefly to the opening of new routes by the Crusades. The markets and fairs which had begun on a small scale in the preceding centuries now became the rule, and soon assumed a more permanent form in the shape of villages and towns. The mediæval town was shut off from its neighbors not only by the actual wall of stone and mortar, but by the no less important economic barrier of trade monopoly; only the townsman, the burgess, might freely buy or sell; only he was admitted to the many trade privileges. On the basis of this economic separation was built up the political independence which is so marked a characteristic of early communal life. Although we call it the village economy, it is evident that the economic unit was not the village or town itself, but the village with the outlying territory. The lands or estates provided the raw materials which were worked up into finished products within the town.

The breaking up of the older unit, moreover, enhanced the importance of industry. In the preceding stage industry was scarcely differentiated from agriculture. The farmer was his own carpenter, the farmer's wife did the haying and made the family clothes. Even where the estates became so large that there were separate classes of industrial workers, they were all under the control of the landowner. Now, however, the village workmen began to form an independent class, even though many of the workmen might have a little garden patch of their own. The point is that they no longer raised the raw

material for industry, but bought it. The farmers grew the material, the village artisans turned out the product and each class progressed by trading with the other.

The new industry was based on trade in another sense. The artisan not only bought the raw material in small quantities, but sold in his shop or in his booth at the fair the products which he himself had finished. The workman was primarily a trader, and his success depended as much on his shrewdness in trade as on his skill in industry. It was only by degrees that the artisans pure and simple became a separate class and that trade was carried on by the large merchants. For a long time business was chiefly of a retail character conducted in the local markets and fairs, and even when the scale of transactions in a few staple articles reached the stage of wholesale trade, the modern machinery of commerce was entirely lacking.

The increasing importance of the trader and the workman was the chief cause of the growing sense of liberty and equality; the mediæval town was the birthplace of modern democracy. It took a long time, however, for industry and trade to attain a dominant position. After some temporary victories in Italy, the trade centres won their first lasting triumph in the Low Countries, and it is accordingly there that we find the earliest example of modern republics on a large scale.

In the later development of this economic stage there were indeed great accumulations of wealth gained in commerce or wholesale trade side by side with the wealth in land. We have not only the feudal landlords but the merchant princes. If we choose to apply the modern term capital to such accumulations, we find agricultural capital and commercial capital, but with rare exceptions no industrial capital. The wealth drawn from the land was under prevailing conditions not again put into the land, but consumed by the landowners; the wealth accumulated in trade could not go on indefinitely multiplying ships and vans without increasing the commodities to be transported; but since these commodities were produced by hand,

the increase was slow. In last analysis, therefore, the economic civilization of this stage rested upon the petty village industry. Commercial prosperity and agricultural wealth were still associated with the prevalence of the small workman and the village economy.

This stage, it is true, assumes different phases. In some places agricultural prosperity predominated and the landowner was supreme ; in others, like the Hansa towns, we find busy marts of wholesale trade, and the predominance of the aristocratic commercial families ; in still others we find the centres of manufacture and the political mastery of the craft guilds. In all cases, however, we have the typical characteristics, — the small trader, the petty workman and the local economy. The large landowner sold his produce in the neighboring village market and drew thence his articles of consumption, outside of simple food. The merchant prince may have traded with distant lands, but the great bulk of the transactions was local, and the business of the national and international fairs was restricted to comparatively few articles. Most of what the workman produced was made to order for the local market. The village or town was the unit ; the foreigner was the man who came from a different town, not necessarily from a different country.

This stage of economic life lasted in Europe for several centuries. Various causes conspired first to modify and finally to destroy it. The chief factor was undoubtedly the accumulation of wealth caused by the discovery of the new world and the opening up of the all-sea trade routes to the East. The discovery of immense sums of precious metal in America and the prodigious impetus given to commerce both East and West produced a heaping up of riches which were now applied on a large scale to further production in industry, and which gradually changed the character of all economic life. This accumulation of wealth, applied to industry, formed what came to be known as industrial capital, and there was thus ushered in the third stage.

33. Capitalist or Industrial Economy.

The characteristic feature of this stage is the appearance of capital on a large scale, applied in industry. With capital, there naturally came the capitalist, the owner of the capital, the employer of labor force and the director of industrial enterprise. In the isolated stage we noticed a unity pervading the whole economic process ; in the local and handicraft stage we saw that the unity was confined to production ; in the capitalist stage production itself is split up. At first, as in seventeenth and early eighteenth-century England, the capitalist makes his appearance at the beginning or end of the productive process : he buys the raw material at wholesale, or perhaps even disposes of the finished product at wholesale, leaving the remainder of the process in the hands of the independent workman. Somewhat later the capitalist acquires the working premises and finally the technical means of production. The workshop becomes the factory, the tools are replaced by machines, and the workman becomes the factory hand. In the meantime the various parts of the process become so important that each separate stage falls into the hands of distinct groups of capitalists, each of them resting on the fundamental class of factory owners. Thus the supply of raw material, the provision of plant and factory, as well as the getting of the finished product to the consumer, call into existence distinct classes of capitalists for each step in the process. Finally the power of capital becomes so enormous that in some industries we find a movement toward integration, and the same capitalists, now associated into a single group, gradually acquire control of the entire process, from the extraction of the raw material to the ultimate disposition of the finished product to the consumer. Thus industrial society comes to be organized on its present complicated basis.

Production is now no longer to order in small quantities, as in the previous economic stage, but large stocks are accumulated to be disposed of when the market is favorable, or large plants

are erected to fill anticipated large orders. The leisurely methods of the old system, regulated more or less by custom, give way to an intense competition which makes itself felt in every nook and corner of industrial society. The last vestige of barter transaction disappears, and money everywhere forms the link between exchanges. Credit outgrows its primitive forms of mere personal assistance and becomes an integral part of production and exchange. The desire to employ capital lucratively leads to the attempt to economize labor force, and brings about the invention of new machinery. The prodigious cheapening of production converts luxuries into necessities and widens the consuming power of the people. The multiplication of wants brings new industries into existence, and finally gives more employment at increasing wages to the laborer. At the same time the enormous power of capital and the separation of society into industrial classes create new and difficult problems.

An important result of the capitalist stage is the supplanting of the local unit by the nation. Production and consumption no longer take place within the local boundaries, but what is produced in one district is often consumed in another. The local economy broadens into a national economy. The larger economic interests now require protection through the formation of broader and stronger political units. Thus the petty feudal principalities disappear and the modern national states are born. Town is no longer arrayed against town, the free-man or burgess gives way to the citizen of the state; the foreigner is now the man from a different nation, not from a different village. In the early stages of capitalistic development the nations oppose each other as the towns had previously done, and this keen national competition leads to much good, although not unmixed with evil.

More recently still, the further application of capitalist methods, the improvements in transportation and communication, coupled with the growth of modern speculation, tend to produce a world market for most products, and the perturbations

of trade are quickly transmitted from country to country. We might thus even be tempted to speak of an international rather than a national economy. But although the signs are not wanting that the ultimate outcome will be the creation of such a world economy, it must not be overlooked that the economic unit to-day is still the nation, and that the national standpoint is being only slowly transformed by universal or international considerations.

The capitalist stage is also called the industrial stage, because industry in the narrower sense is the chief occupation. In the first stage agriculture was the well-nigh exclusive form, in the second stage prosperity rested largely on trade, in this stage agriculture and trade alike step into the background. All products of course still come ultimately from the soil; but an ever-increasing quantity of wealth consists of products several degrees removed from the soil. Production of wealth to-day means more and more the creation of finished products. Commerce, again, is still of great importance; but commerce is now primarily the handmaid to industry rather than to agriculture. Not only has the moneyed interest appeared as a rival of the landed interest, but the moneyed interest itself has become intimately bound up with industry. The great fortunes are gained to-day not in agriculture, nor even in commerce, but in industry. The typical rich man in the first economic stage is represented by the feudal landlord or the plantation owner; in the second stage by the merchant princes, such as the Medici and the Fugger; in the third stage by the Carnegies and the Rockefellers. Agriculture and commerce have been transformed by the application of capital and of machine methods. The most prosperous condition and the widest diffusion of power, of culture and of civilization are found in industrial rather than in agricultural nations.

Some countries, like China, were not touched by this movement, because of the policy of commercial exclusion. So that China is still in the village economy stage. Other countries, like Japan, were brought into the new movement but a few

decades ago, and are now in a process of rapid transition. Still other places, like some of the backward sections of Europe and America, lag behind in the movement. In classic antiquity, as we have seen, the second stage was not reached for a long time. Even, however, where commerce developed on a large scale and the civic centres flourished, industry was still of a petty, handicraft character, and the existence of slavery coupled with the absence of any such revolution in the world's trade as occurred at the close of the middle ages prevented both Greece and Rome from entering upon the later stages of the capitalistic era. Capital in classic antiquity was primarily commercial capital ; capital in modern times is predominantly industrial capital.

CHAPTER VI.

THE HISTORICAL FORMS OF BUSINESS ENTERPRISE.

34. References.

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35. Primitive Economic Activity—The Clan.

Business originally meant the "being busy" for a mere livelihood; it now means being busy for profit. In the same way business enterprise originally denoted any organized form of economic activity; it has now come to involve the idea of making a profit or securing a surplus. "Enterprise" is the Romanic form of the Teutonic "undertaking." When we undertake to secure any form of wealth, we have economic activity; when we undertake to secure profits through some organized activity, we have an undertaking or enterprise.

With the immense growth of such activities in modern times increased importance is attached to the organizer. Not so long ago we called the head of the undertaking the "undertaker"; nowadays with the restriction of the term to a particular class of undertakings we have come to call him the head of the enterprise, or the entrepreneur.

The earliest kinds of business undertakings are outgrowths of the family. The family itself, however, is the result of a long evolution. We have seen that our savage ancestors roamed about in small hordes or packs of a few dozen individuals, the numbers being dependent chiefly on the possibility of securing available food supplies from the berries and nuts, the chase and the waters. After the breakdown of the original monopoly of sexual relations on the part of the leader of the pack, the ensuing promiscuous methods of pairing gradually gave way to more or less permanent forms of marriage, in which kinship was counted through the mother. For amid such conditions of group, rather than individual, marriage relations it was indeed a wise child who knew its own father. These consanguine groups or collections of hordes which we meet almost everywhere at the dawn of history are known as clans (or, to use the Roman term, *gentes*), and, from the fact that their members usually trace their kinship through the mother, are called uterine or maternal clans. In some cases where the primitive agriculture or hoe-culture carried on by the women assumed great proportions, or where we find an increasing significance attached to the domestic arts, like weaving and baking, the social importance of the female was reinforced by still stronger economic reasons, and we encounter a system of society known as the matriarchate, — the government by women. While the matriarchal system, however, is occasional, the maternal society based on the uterine clan is well-nigh universal.

Of the characteristics of this early gentile or clan society there is room to say only a few words. Of a family in the modern sense there was no trace, further than the temporary living together of the mother and the very young children. The only recognized relationship was kinship or membership in the clan. Owing in a large measure to the survival of the primal law of sexual monopoly of the head of the original horde, and perhaps also to a recognition of the injurious results of inbreeding, the custom arose of contracting marriage,

or rather of entering into connubial relations, outside of the clan ; and thus there developed one of the most rigid rules of primitive society, the system of exogamy, or the prohibition of marriage between members of the same clan, as constituting incest. Each clan traced its descent from, and often took the name of, some mythical ancestor,—generally an animal or plant. This totem, as it was called, became sacred and was soon protected by a system of "taboo" or religious prohibition. The origin of the totem worship is still shrouded in mystery, but is probably to be sought in economic reasons,—the totem being at first the chief source of food supply which afterwards became so useful for purposes of barter that its consumption by members of the clan was forbidden. Where conditions were favorable to an increase of population the clans, although always preserving their own integrity, developed into the wider groups of phratries and of tribes, all of them connected, however remotely, by blood relationship. The clans, and in some cases the tribal groups, were the centres for common sports, celebrations and worship, and in the clan or tribal customs we find the germ of what afterwards developed into both law and morals.

36. The Family.

The decay of the clan or gentile society was again due largely to economic causes. Where conditions favored the growth of the pastoral system, private property in flocks and herds arose, and the paramount position of the father as the bread-winner and the defender of the property was recognized. Where the hunting and root-grubbing stage was supplanted by a developed agriculture, the labor of the man in tilling the soil, constructing the house and maintaining the patrimony became of signal importance. The male is now the chief factor in the economic process, and we accordingly find the patriarchal family. *Famulus* is the Latin for servant or slave : all the members of the new family group are the servants of the father. The family relations are primarily property relations. The

father owns the land, the flocks, the wife or wives, the children, the slaves, and exercises scarcely less authority over the other relatives that form a part of the family group. The father gives his name to the wife and children, and the patrimony is handed down from family head to family head. We now find that marriage by capture gives way to marriage by purchase; and the group union of early gentile society is succeeded by the polygamy and finally the monogamy of the patriarchal head. The unity of this new family group is far closer and its discipline far more rigorous than that of the clan, and the recognition of these intimate economic relations leads to the growth of all those finer filial and fraternal ties which are the nursery of ethical progress. For a time the forms of the old gentile society are still preserved amid the newer and more vigorous patriarchal system, either under an agricultural régime, as in the recorded beginnings of Greek and Roman history, or under pastoral conditions, as in the story of the early biblical patriarchs. But with the undermining of the economic foundations of the clan system the whole structure of gentile society crumbled. Wherever territorial relations based on the community of wider economic interests replaced the old ties of blood relationship within the clan, tribal society developed into political society and thus led to the origin of the state and of organized government.

In Judæa, Greece and Rome, as in all countries that had to work out their own civilization, this gradual evolution can be clearly discerned. In other cases where a lower civilization was suddenly brought into contact with a higher one, the steps are often less gradual. Thus the contact of the Teutonic tribes with Rome engendered a rapid transition from gentile to political society, but with a decided abbreviation of the patriarchal period. Much the same is true of the influence of the English on the Irish septs, which lasted well into the middle ages, and on the Scottish clans, which finally disappeared as a power only a century or two ago.

The patriarchal family was thus primarily an economic

product. The family became and remained the basis of social and political life. With the growth of industry and commerce and the opportunity for independent activity on the part of the various members, the old family group split up and was contracted into the family of modern times with its smaller and more immediate circle. Finally, the most recent development of economic life with its freedom and its system of competition has powerfully contributed to a still further loosening of the family discipline ; woman has emancipated herself, divorce has become frequent, the age of the effective independence of the children has been continually pushed further back. Thus there have been ushered in all the ethical and social problems of modern family life, a discussion of which transcends the scope of an economic treatise.

The family thus constitutes the earliest form of business undertaking only in the original sense of an organization to secure a competence rather than a surplus. That is to say, production was carried on within the family, by the family, for the family ; both producers and consumers were members of the family ; each worked for all ; each consumed the products of all. Yet the first attempts at business enterprise in the modern sense of an organization for gain, of producing for a market, are associated with the later developments of the family groups. The great slave plantations of the Roman Republic, for instance, were distinct business enterprises. The larger family groups which became the village communities of the early middle ages and which, when subjected to an overlord, developed into the manorial system were occasionally, at least in part, business enterprises, as in England after the period of the early enclosures. We find examples of this co-operative family or group enterprise not only in agriculture, but also in commerce, as in the trade transactions of the mediæval communes, and even in industry, as in the Russian *artels* or co-operative groups of laborers that have survived to this day. In its essence, however, the family was not well fitted for business, in the sense of profit-making ; and with the

increasing importance of the competitive life the abler individuals who cut themselves loose from the family group forged to the front. With the greater conservatism which always marks the tillers of the soil we find this process slower in agriculture than in industry and commerce. It is accordingly in these latter directions that we must first look for the more developed forms of business enterprise.

37. Help or Hire System.

Where industry develops beyond the capacity of the family group and where the conditions are not favorable to the growth of slavery, we find the beginnings of industrial assistance from outside sources. The independent laborer who roves from house to house and from place to place does more of the work of the household. Carpenters, cobblers, glaziers, tinsmiths, masons, seamstresses,—these represent a few of the occupations conducted in this roving fashion. The itinerant workman receives a compensation for his services and often becomes for the time being a member of the family. This custom survives even to-day, not only in the New England institution which bears the significant name of "help" (even though the service has become somewhat more permanent), but also in the temporary assistance given to our Western farmers at harvest time by the "hired man." This system can thus best be termed the help or hire system.¹ It is found in the early history of almost every society, and those familiar with the rural communities of Switzerland and Scandinavia will recognize it as the prevalent form to-day.

In its essence, however, the help system is an intermediate and transitional form. The important factor is still the family group; the consumer furnishes as before the raw materials and receives in return the finished product, the workman supplying the labor force and sometimes the tools. Gradually

¹ The term "wage-work," used by Bücher and his translator, *Industrial Evolution*, p. 162, is ill chosen, because the term wage-earner inevitably brings to mind the modern factory system.

the change assumes a more rapid pace. The smaller households find that they need outside help more frequently but less intensively, and the larger family groups find it profitable to set some of their superfluous assistants to work for others. The custom arises of the consumer going to the workman rather than the workman coming to the consumer. Thus the occupations of the village blacksmith, the miller, and even the baker and weaver become settled trades. The itinerant workman acquires greater permanence, and from assistants the laborers now evolve into a class independent of the family group. When this step is reached, we have what is known as the handicraft system.

38. Handicraft System.

Under this system the artisan is independent. He no longer works in the house of the consumer. He occupies his own house, he goes to market to purchase his raw materials, he works up the raw material in his own home with his own tools and he sells the finished product to the consumer in his own shop. We no longer have production for the family, as in the family system; we no longer have the raw material and the finished product belonging to the consumer, as in the help system. Every phase in the process down to the sale of the final commodity is in the hands of the workman himself. The workman or craftsman, moreover, finishes everything by hand, and it is for this reason that we speak of the handicraft system. This does not mean that things were not previously and even subsequently made by hand, but calls attention to the fact that the distinguishing mark is the growing importance of industry and the rise of an independent class of workmen, who conduct business enterprises by themselves. Since the producer makes to order for a special customer, the system is also sometimes called the custom system,—a term still surviving in the custom-tailor of to-day.

In the middle ages the workmen gradually banded themselves together by trades into compact organizations known as

guilds or crafts. Historically the system has therefore come to be known as the guild system. The guilds, however, were a result rather than a cause ; and in many parts of the world we find the handicraft system without the guilds. Under the guild system every workman might ultimately look forward to membership. Starting in as an apprentice, he spent a few additional years as journeyman, and when he had finally mastered all the details of the trade, he was admitted as master craftsman. To use modern terms, which had no meaning then, he was at once employer and workman, capitalist and laborer. The modern differentiation of classes was unknown. At the height of their power the guilds often secured a political domination. In many countries they came to be virtually identical with the townsmen ; the division of labor between land and town assumed a sharply defined form, and the manor became more and more the simple purveyor of raw material for the guild. Just as the family system of industry corresponds to the typical isolated household economy, so the guild or handicraft system corresponds to the typical trade or local economy.

The guild system characterized the industrial life of Europe for several centuries after the Crusades. With the increase of wealth, however, a twofold process went on. The guilds grew more grasping and exclusive, until they became monopolistic bodies, proving a drag upon industry instead of a help. Membership was confined to a select few whose right to practise the trade was inherited, and the mass of the workmen could no longer look forward to participation in its benefits. Newer industries started wherever they could, in independence of the old crafts. Secondly, and more important, as the richer craftsmen amassed wealth, they as well as the larger traders desired to put it to productive uses. Thus, as we have seen, there developed a true industrial capital which could not well find employment within the limits of the old system. The guild or handicraft system slowly decayed, and there was ushered in the next stage, known as the domestic system.

39. Domestic System.

Here for the first time we find a line drawn between the capitalist employer and the workman. In the help system there was also an employer, but he was himself both workman and consumer. In the handicraft system the employer was no longer the consumer, but was still, in part at least, the workman. In the domestic system the employer and the workman are differentiated. The method of sale of the finished product, moreover, is another point which distinguishes the domestic system not only from the help system but also from the handicraft system. In the help system the product is not sold at all ; it is consumed by the employer. In the handicraft system, where production is carried on on a small scale and to order, the commodity is sold directly by the workman to the consumer. Now, however, where capital has made production on a larger scale possible, the market is so widened that the individual workman is no longer able to control the means or to devise the machinery for placing the products on the market. The capitalist alone can do this.

The essence of the domestic system consists in the fact that while the workman still owns his tools and conducts the work in his own home, often with the aid of his family and in connection with some agricultural activity, he no longer disposes of the finished product. In most cases, in fact, he no longer buys or provides the raw material ; for the same capitalist who disposes of the product also finds it possible to purchase the raw material in larger quantities. The division of labor goes a step farther than in the guild system. Not only does one class produce the raw material, and another the commodity ; but the production of the commodity itself is now divided between two classes, the one buying the materials and marketing the goods, the other furnishing the productive power or manual labor, the tools and the work place.

The term domestic system is not a happy one, for under the handicraft or guild system the laborer also worked in his own

home. It is used, however, to distinguish this form of capitalistic enterprise from its successor where the laborer no longer works at home. Again, under the domestic system the laborer still works by hand, but since he is no longer in control of the entire process of production we distinguish it from the handicraft system. The term that was now applied to the domestic workman is manufacturer, the maker by hand (*manus, facere*). Sometimes, instead of domestic or home work, we speak of commission work. The capitalist owner of a commodity commits it to another independent individual to be worked up and returned to him. In the clothing trade to-day we still distinguish between custom work (the old handicraft system) and commission work.

The domestic system, which developed during the seventeenth century and reached its climax in England in the eighteenth, was modified with the immixture of capital into the successive stages of business. The most important change was due to the desire to economize in production and to apply capital lucratively through the invention of labor-saving devices, or machines, which substituted mechanical power for human labor. In the textile industries, the period before 1770 marks the early experiments, the period 1770–1790 the development of the great mechanical inventions, the period 1790–1830 the application of steam power, and the period after 1830 the widening of the market through the railway and the steamship.¹ The other industries soon followed, and there was thus inaugurated what is termed the factory system.

40. Factory System.

This system is the one under which the modern world lives. Here the capitalist employer not only provides the raw material and disposes of the finished product, but also controls the

¹ The important dates are: Kay's flying shuttle, 1738; Hargreave's spinning jenny, 1764; Arkwright's spinning frame, 1768; Crompton's mule, 1779; Cartwright's power loom, 1785; Watt and Boulton's steam-engine, 1785.

intermediate process. The machinery is so costly as to be beyond the reach of the workman ; and since the machines are the property of the employer the building in which production is carried on must also belong to him and is called the factory. The laborer is not his own master, as in the handicraft system ; he no longer owns the tools and the workshop, as in the domestic system : all that he does is to provide the human labor force which is applied through machines and in workplaces owned by the capitalist employer. The stupendous increase of production which is thus rendered possible reacts upon the laborer, both as producer and as consumer. Population increases enormously, and there is a continual drift from the country to the city. Industrial society receives its modern shape, and the social income is divided into the rent of the landowner, the wages of the laborer, the interest of the capitalist and the profits of the entrepreneur. "Manufacturer" no longer means the handworker, but the individual who employs others to work for him. The development of capital leads to keener competition and speculation, new classes of capitalist middle-men arise and the machinery of credit and exchange is transformed. The predominance of the industrial capitalist employer is so pronounced as to give to the whole form of business enterprise the name factory system.

So markedly different is this from any of its predecessors that the process which brought it about is commonly termed the Industrial Revolution. If by revolution, however, we mean a sudden and complete overturning of the old, the name is ill chosen. For the process was a gradual one. It took several decades for the transition in the English textile industries to be consummated, and in the other occupations the supplanting of the domestic by the factory system proceeded step by step during the nineteenth century. Outside of England, the movement came later and more slowly, while even in England there are still a few trades, like those of the glass-workers, the cutlers and the chain-makers, in which the factory system has made only slight inroads.

It must not be thought that each of these forms of enterprise is marked off from the others by sharp lines. In every stage we notice survivals. The family system is still found in the outlying regions of almost all countries where modern ideas have not completely penetrated, as, for instance, the Southern Appalachian mountains; the help system survives in various kinds of domestic and other service; the handicraft method is typified in the cobbler or custom tailor; the domestic system plays a considerable rôle in the hand-loom weavers of Europe and the sweat-shops of modern cities with their commission work in the clothing trade. The economic life of a people, however, is characterized by the type forms, not by the survivals of a preceding system. Modern business enterprise is based to an overwhelming degree on the factory system.

41. Associated and Corporate Enterprise.

We have thus far discussed the growth of business enterprise from the point of view of the differentiation of the entrepreneur. We have now to treat it briefly from the point of view of associated production. Here we can trace four stages,—enterprises carried on by individuals, by partnerships, by corporations, by trusts.

(1) We have seen that while the family was the earliest form of associated activity it was not well suited to the keen economic struggles inseparable from business life. Business enterprise really begins with the business man, and the business man, now as then, is to a large extent born, not made. Sagacity, boldness, good judgment and administrative ability have always been the mental equipment of the successful merchant. To the extent that the individual has possessed these qualities, he has forged ahead. As business enterprises increased, however, the individual often found himself unable to cope with the situation single-handed. He therefore associated himself with others who possessed some of the qualities which he lacked.

(2) The partnership was a device to strengthen enterprise at its weak points. It meant the association of various kinds of

ability, and often of capital and ability, and multiplied to that extent the economic efficiency of the unit. The partnership, however, has decided limitations. The personal relation between the partners and the need of implicit confidence in each other necessarily restrict it to a few individuals. As soon as the business calls for the employment of a capital beyond the means or the desires of a few partners, a new form of enterprise is needed. This is supplied by the corporation.

(3) Although according to the recent researches of Deloume and Weber the commercial corporation probably existed in the later centuries of the Roman Republic, in its modern shape it dates from the early mediæval Italian cities. The earliest form was that of a bank, individuals associating their capital to form a joint stock, loaning it to the government on a pledge of certain revenues, and participating in the profits according to their holdings. Thus the beginnings of public credit, of banking and of corporate enterprise are found intimately associated. The next important development of the joint-stock principle was in the trading companies of the sixteenth century, which were at first mere temporary associations for the purposes of a single voyage, but which gradually assumed a more permanent form. It was not, however, until the predominance of industrial over commercial capital in the nineteenth century that we find the immense expansion of corporate enterprise which marks modern life.

The economic advantages of corporations are threefold,—joint stock, limited liability, perpetual life. Through the device of the corporate security, the number of the investors may be multiplied without limit. Every stockholder has a voice in the enterprise in proportion to his investment. He is liable for the debts or losses only to the limit of his own share. Modern states have been slow to recognize this principle of limited liability, but it now forms the very heart of the system. It removes the apprehension and distrust which lay at the basis of the overgrown partnership and the unlimited liability company. It has facilitated the marketing and trans-

fer of the shares and has rendered possible the vast accumulation and the minute dissemination of capital. Finally, the corporation, unlike the individual, never dies until the business is liquidated; the shareholders disappear, the shares remain. It has all the advantages of permanence and stability; it can plan for the morrow as well as for to-day, and by proper choice and renewal of its board of directors it can continually command the highest ability and adjust itself to altered needs.

As against these advantages there are undeniable shortcomings. The "corporation problem" touches the threefold relation of the corporation to the investors, the employees and the public. The protection of the minority stockholders and of the "innocent investors," the mutual relation of the stockholder and the bondholder, and the enforcement of real trusteeship on the part of the directors are matters that still remain to be adjusted. The conditions of employment are often modified by what is termed the substitution of the cash-nexus for the old-time personal bonds between employer and employee. The corporation proverbially has no soul. Finally, as against the public the corporation will often do what individuals as such would shrink from doing. It is not a light task to raise the plane of corporate morality to that of individual business ethics. With all its shortcomings, however, the corporation is indispensable to modern business activity. Without it the world would revert to a more primitive state of economic well-being, and would virtually renounce the inestimable benefits of the best utilization of capital.

(4) Where the advantages of united capital on a gigantic scale become still more apparent, the associations of individuals into corporations are further developed into unions between corporations. These at first assume the form of more or less loose agreements, fixing prices or conditions of production. A further stage is reached when receipts are pooled, and the unions adopt the name of pools. A still closer association is effected when the enterprises are united under a common

head, and known as trusts, because originally the co-operating corporations put their respective holdings of stock into the hands of trustees, who were to direct the joint enterprise. Where, as in the United States, this particular method of union has been declared illegal, the same results have been reached by forming a new and independent corporation. What are to-day popularly called trusts are simply huge corporations. The trust problem is therefore in many respects a phase of the corporate problem. From this point of view, as we shall see hereafter, the so-called trust is as much a natural development from the small corporation as the corporation itself is an out-growth of the business partnership, or the partnership an evolution of individual activity. The reasons and limits of this development will be studied below. It is clear, however, that with the growth and differentiation of capital, under the prodigious development of modern industry, the forms of business enterprise are steadily becoming more intricate.

CHAPTER VII.

ECONOMIC DEVELOPMENT OF THE UNITED STATES.

42. References.

Katharine Coman, *Economic History of the United States* (1905); C. D. Wright, *Industrial Evolution of the United States* (1902); J. D. Whitney, *The United States* (1889); J. B. McMaster, *History of the People of the United States* (5 vols., 1883-1900); W. J. Ashley, *Surveys, Historic and Economic* (1900), 309-360; G. L. Beer, *The Commercial Policy of England toward the American Colonies* (Columbia Studies, III, 1893); E. L. Lord, *Industrial Experiments in the British Colonies* (1898); P. A. Bruce, *Economic History of Virginia in the Seventeenth Century* (2 vols., 1896); W. B. Weeden, *Economic and Social History of New England* (2 vols., 1890); F. J. Turner, *The Significance of the Frontier in American History* (Am. Hist. Assoc. Report, 1893), 197-227; M. B. Hammond, *The Cotton Industry* (Am. Econ. Assoc. Publications, New Series, No. 1, 1897); chapters on "economics" and "social development" in most of the volumes of Hart, *American Nation, a History* (27 vols., 1904-).

43. Early Period of American Economic Life.

The United States is a particularly interesting illustration of economic development, because of its rapid pace and because of the co-existence of different phases. At the beginning the striking fact, as in all colonies, was the contact of an intellectually advanced population with primitive economic conditions. The white man brought with him the civilization of the old world, and was saved the necessity of the painful evolution of centuries. Possessing the use of perfected tools, the conception of private property, the institutions of government and of the family, it was impossible for him to revert to the hunting or nomadic stage. The impracticability of converting the savage at once into a husbandman led to the disappearance of

the red man before the economic onset of the colonist. Yet in the presence of a vast and unsubjugated expanse of nature the immigrant had to start afresh and to unlearn many a lesson of his former home. Coming from a trade or local economy, he was thrown largely upon his own resources in a comparatively isolated economy. Agriculture again became the predominant occupation ; an agriculture, however, now based not upon feudalism, but, in the North at least, upon the independent farmer. The attempts to introduce into the Middle states the types of mediæval land relations could not be permanently successful ; and only in the South, for obvious reasons, was it possible to reintroduce the primitive system of slavery.

The typical American was the backwoodsman, using his gun but wielding his axe, and depending primarily upon his hoe and plough. Step by step he cleared the forest and cultivated the soil, and in this continually renewed contest with nature hammered out those sturdy qualities of mind and heart which soon enabled him to add political to economic independence. The frontier is the home of democracy, because the frontier is the home of economic equality. As it was gradually pushed inland the communities which had left the frontier stage behind them developed from the family system of industry, through the help, into the handicraft and domestic system. The guilds which were fast decaying in the old world found no foothold in the new ; and as the villages and towns sprang up the insignificant industry was carried on by the independent hand-craftsman. Everywhere, moreover, agriculture was the chief source of wealth.

In the South the increasing accumulations of wealth were put into more land and more capital. In the Middle states, and a little later in the Northern states, the new wealth took the form of commercial capital ; and as it was gradually pushed into industry the domestic system arose. At the time of the Revolution and down to the war of 1812 the " manufacturer " was still the manual workman, and the whole industrial devel-

opment was insignificant in the extreme. The war with England and the years of unrest which preceded it brought about a shifting of capital from commercial to industrial pursuits, and the factory system was fairly inaugurated, in a few of the textile industries at least. Under the fostering care of the "American system," as the new protective policy was called, the industries thrrove,—although we must not exaggerate the influence of legislation upon what would at all events have been the natural, even if slow, evolution of industrial capital. For this natural growth in the North and East was due to the pushing of the frontier beyond the Alleghanies, and to the consequent accumulation of agricultural profits which soon took the form of industrial capital under the impetus of the demand of an increasing population for manufactured products. Nor was this growth checked by the reversal of the tariff policy and the adoption, during the thirties to the fifties, first of the Compromise, and then of the so-called Free Trade systems, dictated by the manifest interests of the politically dominant South. The South, as the exporter of cotton and the importer of manufactured products, had clearly no interest in the development of industrial, as over against commercial or agricultural, capital.

44. Growth of American Industry in the Nineteenth Century.

The growth of prosperity during the middle of the nineteenth century was due primarily to other causes, three in number: (1) the rich valleys of the Mississippi and its tributaries were reached by the tide of immigration; (2) the abolition of the corn laws in England opened a vast and profitable outlet for the increasing yield of wheat; (3) the discovery of gold in California furnished an immense treasury of mineral wealth. There was thus repeated on a large scale what had occurred in a smaller way a generation earlier. This conversion of agricultural and mineral wealth into industrial capital assumed, however, a slightly different form. Although the textile and iron industries now supplied a larger output for the

increasing demand of a quickly growing population, the chief need and the most lucrative employment of capital was associated with the development of modern transportation methods. The railroad becomes the most striking form of corporate enterprise. Up to the middle of the century the few corporations — chiefly banks, turnpikes, canals and railways — were compelled to take out separate charters. Now under general incorporation laws the railroads multiplied and soon brought in their wake all kinds of industrial enterprises. From this time on the country was fairly launched on the wide sea of corporate activity.

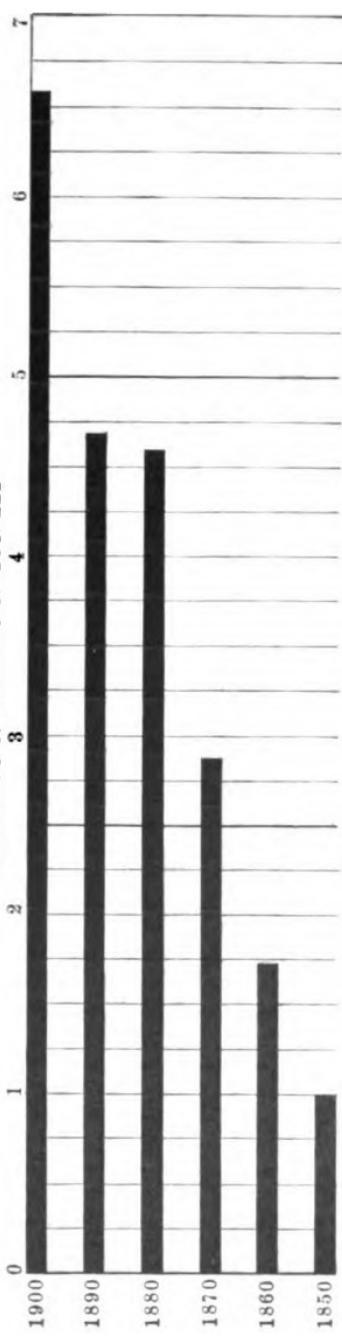
The agitation which culminated in the civil war was at bottom the political expression of an economic antagonism between two divergent systems. The one was based on agriculture, and heaped up its wealth in the transition forms from an isolated to a trade economy resting on slavery. The other had but just entered on the stage of the capitalist economy, and the influence of the rapidly developing factory system in providing a home market for the independent Western farmer soon united the economic interests into a compact and self-conscious whole. The phenomenal growth of the fifties, which menaced the economic preponderance of the South, brought the conflict to a head. The South possessed if anything the greater statesmen, the more gifted military leaders and the better navy ; but when the outlet for its staple crop was stopped up by the civil war it died of inanition and fell a victim to the economic superiority of its industrially diversified and therefore more enduring antagonist.

It took the South a generation to repair the ravages of the desperate conflict, but with the beginning of the new generation the inevitable results appear. Here and there in the South the march of industrial capitalism is under full swing, and the conversion of the handicraft and domestic stages into the factory system is proceeding apace. The transition in several of the Southern states is bringing to the front economic and political issues which agitated New England a

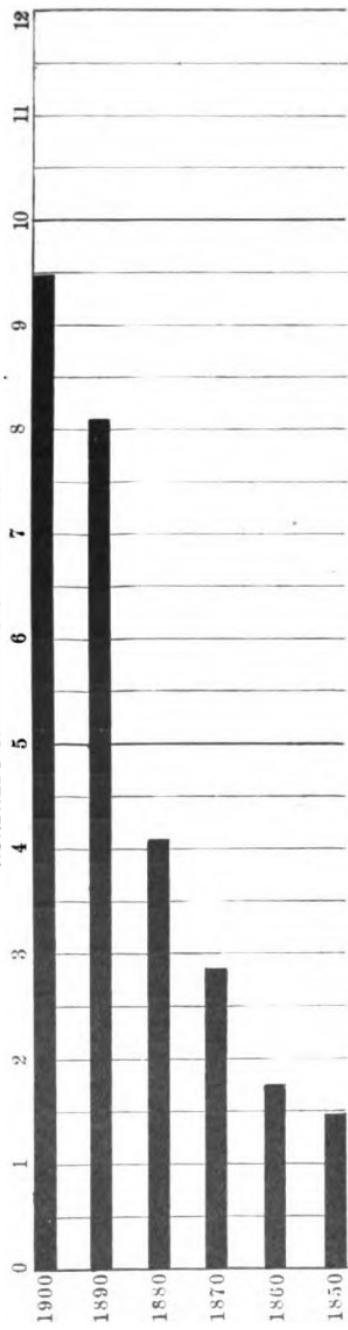
1. PRODUCTION OF CORN: 1850 TO 1900.



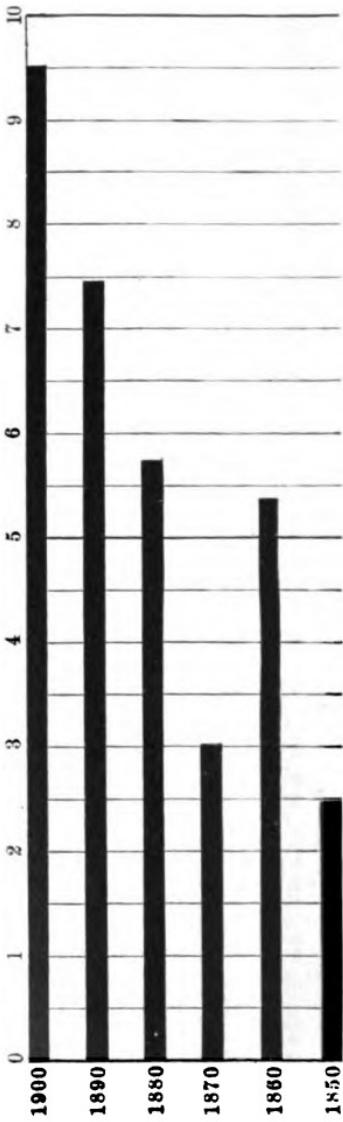
2. PRODUCTION OF WHEAT: 1850 TO 1900.



3. PRODUCTION OF OATS: 1850 TO 1900.



4. PRODUCTION OF COTTON: 1850 TO 1900.



generation or two earlier, and which were fought out in old England before the middle of the century.

In the North the post-bellum period witnessed an acceleration of the movement which had so auspiciously begun. Notwithstanding the great increase of industry in the East, the rapid opening up of the far West and the application of capitalist methods to the exchange, and even in part to the production, of farm products so stupendously augmented the output that the prosperity of the country still in large measure rested on its agricultural wealth. Toward the end of the century, however, with the practical exhaustion of the free land which enjoyed adequate rainfall, the industrial movement, which had been gradually creeping farther west, now furnished a continually more lucrative opening for the employment of the fast accumulating capital. By 1900 over a third of the entire population lived in the commercial and industrial centres, and about a third of the exports consisted of manufactures.

The change in the character of the national production, and the transition from agricultural to industrial conditions, are illustrated by the following tables:

PRODUCTIONS OF THE UNITED STATES
(IN MILLIONS).

	1850.	1870.	1900.
Population	23	39	76
Farm Products	not given	\$1,958	\$3,764
Minerals	" "	219	1,063
Manufactures	\$1,019	4,232	13,039

EXPORTS OF THE UNITED STATES (IN MILLIONS).

	1860.	Per cent.	1900.	Per cent.
Agricultural Products . . .	\$257	81.13	\$835	60.98
Mining, Forest and Fisheries	19	6.11	101	7.47
Manufactures	40	12.76	434	31.65

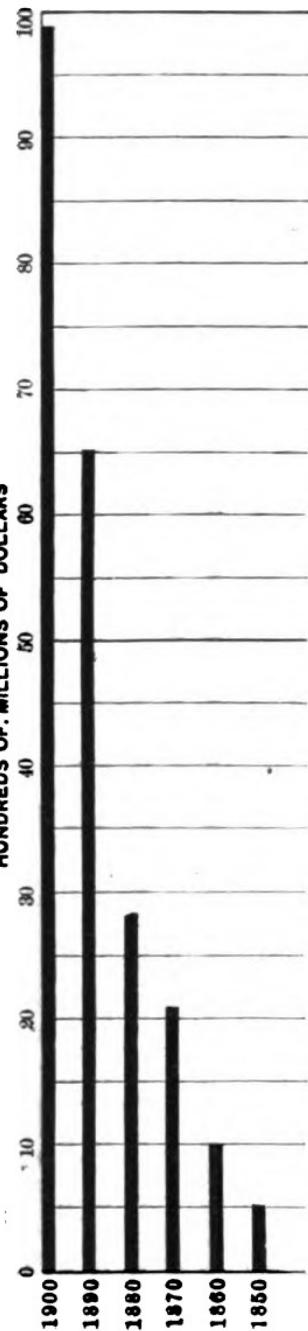
On page 105 will be found the details of the chief products of the United States, as well as the most important exports of manufactures. On the charts opposite pages 102-103, 104-105 and 106 will be found statistics of the growth since 1850 of certain agricultural products, general manufactures and iron ore. It will surprise many to learn that there were in 1900 six classes of manufactured products each aggregating over half a billion dollars in value, as against one agricultural product and no mineral products.

45. Recent Development of American Industry.

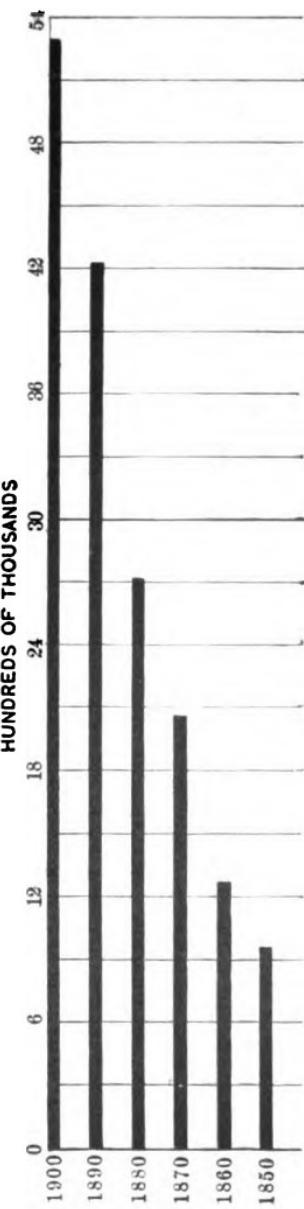
This gigantic increase in capital has not only created the transition to the period of trusts and huge corporations, but has emphasized the national and international significance of the modern movement. The economic unit in the United States is fast becoming a national unit. Industry is no longer confined to the old local limits. Commercial interests have overstepped the boundaries of any one state. Action by any one commonwealth inevitably reacts upon its neighbor. Economic and political methods framed on the old assumption that business is local are bound to create injustice and dissatisfaction. Secondly, the transition to a more intensive capitalism and the growth of industrial exports mark the economic as well as the political maturity of the country. The acquisition of Porto Rico and the Philippines is more than a mere accident. The foreign market is becoming an adjunct to our industry rather than to our agriculture; it assumes such importance because our economic welfare, so far as it rests upon international trade at all, will be affected more and more, not by what the foreigner must have in the shape of food, but by what he can be persuaded into wanting in the shape of finished products.

There is, however, another side of the picture. The United States has so rapidly outgrown the swaddling clothes of its infant economic surroundings, and has stepped with such giant strides from its youthful social environment to the

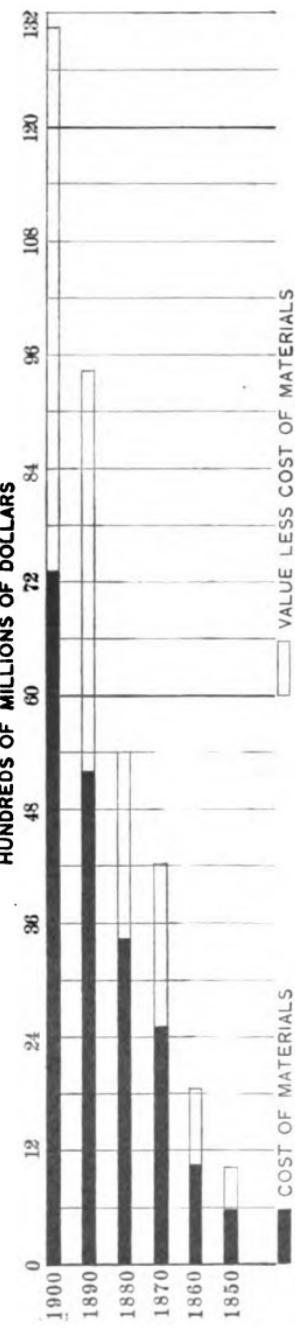
1. CAPITAL INVESTED AT EACH CENSUS: 1850 TO 1900.



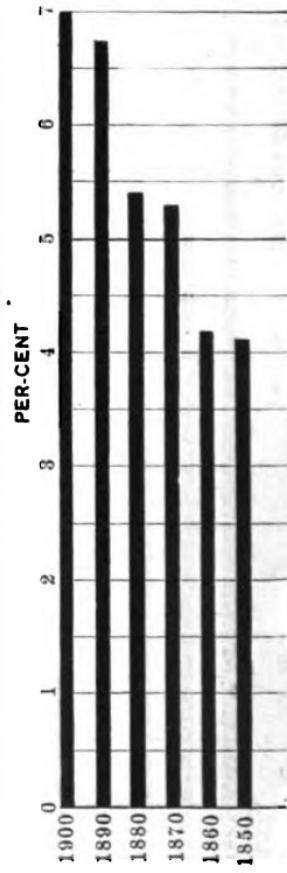
2. AVERAGE NUMBER OF WAGE EARNERS EMPLOYED
IN MANUFACTURES AT EACH CENSUS: 1850 TO 1900.



3. VALUE OF PRODUCTS AT EACH CENSUS: 1850 TO 1900.



4. PROPORTION OF AVERAGE NUMBER OF WAGE EARNERS EMPLOYED
IN MANUFACTURES TO POPULATION AT EACH CENSUS: 1850 TO 1900.



From Reports of Twelfth U.S. Census, Statistical Atlas.

ANNUAL VALUE OF THE MORE IMPORTANT PRODUCTS
 (IN MILLIONS).¹

FARM CROPS.			MANUFACTURES.	
	1900	1903		1900
Corn	\$828	\$953	Iron and Steel	\$804
Hay	484	556	Slaughtering and Meat Packing	790
Wheat	369	443	Foundry and Machine Shop .	645
Cotton	323	454	Men's and Women's Clothing .	575
Oats	217	267	Lumber and Timber	567
Forest Products .	110		Flouring and Grist Mill	561
Potatoes	98	151	Printing and Publishing	347
Orchard Products	84		Cotton Manufacture	339
Tobacco	57	55	Carpentering	316
Wool (1901) . . .	51	59	Woolen Manufacture	297
MINERAL PRODUCTS.				
Pig Iron	260	344	Tobacco Manufactures	263
Coal	221	504	Boots and Shoes	261
Copper	98	92	Malt Liquors	241
Gold	79	74	Cars	238
Silver	76	70	Leather	218
Petroleum	76	95	Masonry	204
Stone	65	68	Bread and Bakery	204
			Lead Smelting and Refining .	176

 VALUE OF EXPORTS OF MANUFACTURES
 (IN MILLIONS).

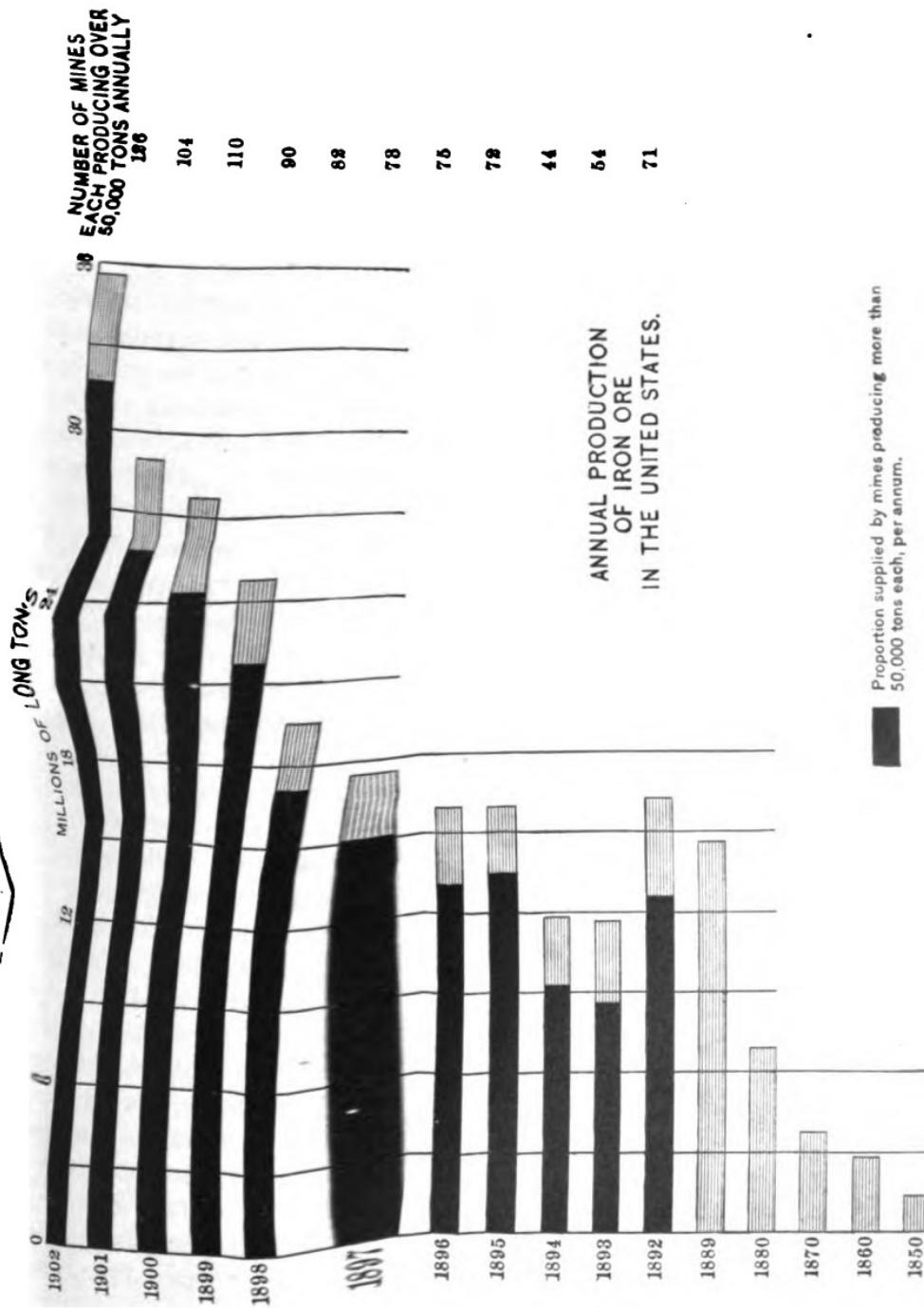
	1890.	1900.
Iron and Steel Manufactures	\$26	\$122
Refined Mineral Oil	45	68
Copper Manufactures	2	58
Leather Manufactures	12	27
Cotton Manufactures	10	24
Agricultural Implements	4	16
Chemicals	5	12
Wood Manufactures	6	11
All Manufactures	151	434
Per cent of Total Exports	17.9	31.7

¹ Arranged from the *Twelfth Census of the United States* (Vol. VII and Abstract), the *Statistical Abstract of the United States*, and *The Mineral Resources of the United States*.

complex conditions of a full-grown industrial society, that the development has been most uneven. America presents in some respects the most striking contrasts. It is at once the youngest and the oldest of economic societies. It is the youngest, in the sense that there are still large tracts untouched by plough or harrow, awaiting the coming of the first settler and needing only irrigation to convert the desert into a garden. It is young because there are huge sections, only one step removed from the primitive economic stage, under conditions analogous to those which the old world faced many centuries ago. In another sense, however, America is not young, but old. Nowhere on the face of the globe has capital been applied to productive purposes with such intensity and such energy. Nowhere has man's victorious contest with the powers of nature been waged with such intelligence and such relentless vigor. Nowhere have the captains of industry prosecuted their quest for industrial supremacy with such alertness and ability. As a consequence, nowhere have the most advanced forms of a highly organized, fully differentiated, thoroughly complex industrial organism been evolved with such startling rapidity and such complete success. In the development of these new economic institutions America is leading the world and is showing other countries what stages they have still to traverse. While the movement toward combination of capital has even in Europe made only timid beginnings, it is revolutionizing American industry. In this sense America is old,—far older than most of its industrial rivals.

46. Modern Problems of America.

As a result of the forces just described, we are face to face with two sets of problems. The one set has its origin in the newer and less developed sections of the country, and may be illustrated by the currency question. This includes far more than is implied in the term itself. It involves, in large sections of the West and the South, not so much an increase of the money supply as a rearrangement of the economic forces and



a readjustment of the relations of indebtedness to productive capacity. With every shifting of the frontier farther westward we have had such periodical readjustments. At the very beginning of our national life, when the frontier was located in western Massachusetts, came the economic outbreak known as Shays' Rebellion. A generation later similar causes produced on the new frontier the troubles which culminated in the stay-laws of Kentucky. When the frontier reached the Middle West, almost half a century later, the same movement assumed the guise of the fiat money craze. Finally, after the lapse of another generation, when analogous economic forces worked out their result, not only in the frontier life of the West, but also amid the primitive economic conditions of large sections of the regenerated but as yet undeveloped South, we reach the discussion of silver currency which began in the seventies and culminated in the nineties. With the disappearance of the frontier and the not far distant industrial awakening throughout the entire South, it is probable that the money question will assume as subordinate a rôle in the future of the United States as it has assumed in the advanced countries of Europe.

On the other hand, the second set of problems that confront us is due to the new and complex industrial conditions of the more advanced sections. These new conditions have given us the corporation problem, the wages problem, the tax problem, the colonial problem, the city problem. It is as idle to inveigh against the policy of territorial expansion, on the ground that such a scheme was not contemplated by Washington, as it would be futile to object to the regulation of combinations because this also involves a new departure. In the one case, as in the other, economic conditions have arisen which were unknown to the fathers, and which require for their solution a new analysis and a new method.

What is peculiarly confusing, therefore, is the fact that on the one hand we have sections where the economic conditions are of a primitive type, while on the other hand in numerous

parts of these sections themselves there have been grafted upon the still dominant and persistent primitive stock the shoots of the modern industrial type. The newer methods of transportation, as well as the modern media of exchange and distribution, have superimposed upon the simplicity of an undeveloped agricultural community the complexity of modern industrial enterprise. The consequence is that the economic conditions of the country are supremely heterogeneous, although tending to become homogeneous. Because of this contest of the old with the new, we are in many respects still groping in the dark, dissatisfied in the more progressive communities with the survivals of old conditions, and trying to discern in the dim light of the future the final expression of the newer conditions which are soon to become universal.

CHAPTER VIII.

DEVELOPMENT OF ECONOMIC THOUGHT.

47. References.

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48. Economic Theory in Classic Antiquity.

It has often been said that economics is a modern science. In point of fact, it is only modern economics that is a modern science. Every economic stage which has been marked by any scientific thinking at all has had its own economic theory. The stars indeed moved for æons before man thought of astronomy. So economic phenomena existed for centuries before any attempt was made to analyze them. Once formulated, however, the economic theory of any period is usually nothing but the reflex of its economic life.

The earliest speculation on economic phenomena of which we have any knowledge is that of classic antiquity. Prior to the Greeks we find only ethical exhortations on social reform

as among the Oriental nations, or practical treatises on agronomy as among the Carthaginians. But both Aristotle and Xenophon, to mention no others, wrote distinct treatises on economics. Greek and Roman economic life was not only based on slavery, but never outgrew the period of domestic industry and petty trade. This explains both the content and the omissions in Greek and Roman economics. Wealth existed, and we find the term discussed ; but stress was laid primarily upon the uses to which it might be put by the individual. The idea of value was apprehended, and the distinction between utility and value pointed out ; but no further application of the distinction was made. Private property had long been known ; and we thus find interesting theories as to its origin and justification as against the dreams of the communists, the socialists and the land nationalizers, who flourished then as now. Since the economic conditions were such that slave labor was highly productive, slavery was defended as a natural institution and as compatible with the highest morality.

In the early system of industry the relation of master and slave was like that of husband and wife, of parent and child : the slave, the wife and the child all belonged to the household head ; their labor was necessary to the family maintenance. When in later centuries the economic conditions of imperial Rome made slave labor less productive, it is significant that the writers first pointed out the moral shortcomings, and a century or two later the economic defects, of slavery. In the main, however, at the time of the chief prosperity of Greece and Rome, industrial capital did not exist as a controlling force in production : thus neither the term nor the idea is found ; capital is not yet differentiated from wealth. It is a striking fact that Aristotle seems to have a premonition of a future industrial system when he says : "If the combs would make the web close, or if the keys of themselves struck the harp, masters would need no assistants nor slaves." But although capital had acquired no importance, a considerable division of

labor based on handicraft industry is found in actual life and is accordingly discussed in the economic treatises.

If the theory of production was simple, that of distribution was entirely absent. For it was the landowner who controlled the processes, and owned the results, of production. The landlord was the property lord, and even where commercial capital developed, it was the large landowner who also carried on the great commerce. Even where the independent trader developed, however, his gains seemed to be of the same nature as those of the landowner. There was thus no distinction recognized between land and capital, as factors in production. The landlord, again, was the slave owner; there was thus no line drawn between land and labor, and no theory of wages. The doctrines of rent, profits and wages did not emerge, because the phenomena themselves did not exist as the incomes of separate social classes. There was not even a theory of individual income; the mass of property yielded indeed a return or produce, but this entire produce simply went to swell the property, just as the expenses had been a part of the property. We have many terms for property, but no distinction between produce and income.

This explains also the classical theory of interest. Funds were loaned not as capital, but as money. So far as there was any credit, it was primarily for consumption; that is, the loans were mere personal loans made to tide over temporary embarrassment. Even when money was loaned in agriculture or in trade, the function of capital was not understood, because only when capital is used in industry is it easy to realize its productivity. Interest was thus regarded as paid for the use of money, and, as money is in itself barren, interest was deemed unjustifiable. As a matter of fact, the interest charged on such loans did often have the effect of usury and frequently resulted in the subjection of the debtor to the creditor. In the absence of industrial capital there was some justification for the theoretic opposition to interest. In the later centuries of imperial Rome, when commercial capital had developed, interest

became necessary ; but it was then defended in the Roman code by virtue of a legal fiction, not on economic grounds.

During the later period of Greek and Roman life the original barter economy had given way to a money economy. The classic writers therefore devote some attention to the theory of money. The whole theory of price, however, was still much neglected, because trade was something outside of the ordinary activity of the slave plantation, and business enterprise had but little scope under a system of handicraft industry. It is thus easy to understand Aristotle's and Plato's condemnation of such vocations as something "unnatural," or Cicero's characterization of them as sordid and "unbecoming a gentleman." As with the private economy, so with the public economy. The revenues of government were derived chiefly from its own lands, worked in the same way as in any private household. Direct taxes were unknown except in extraordinary emergencies. The amassing of treasure, not the use of public credit, served for war purposes. Hence the Greek treatises on public finance deal with subjects that are almost completely absent from modern works.

Classic antiquity, in short, had an economic theory which explained its economic phenomena ; we must not criticise it on the ground that it does not explain our phenomena.

49. Mediæval Economic Theory.

After the intervening centuries of mental darkness and industrial stagnation, economic theory began anew with the growth of enterprise in the twelfth century. The new theory was the outgrowth of the new economy. The typical fact of this new economy was, as we have seen, the development of trade and commerce, no longer based on slavery. The great problem of mediæval economics thus became the problem of exchange value and how to make this new kind of values conform to the demands of justice. Since things were no longer made to be consumed at home, as in the earlier centuries, but were now made to sell, the question arose, for what shall they sell,

or what is the proper and reasonable price? The answer could not be the price as fixed by competition, because in the mediæval economy there was no free competition. Goods were produced by the guilds, but the guildsmen could not underbid each other. Even in articles which came from outside, to take advantage of one's neighbor by purchasing the wares before they reached market, or by buying at wholesale to sell at retail, was deemed a heinous offence. In an economy whose keynote was production to order, and where every one did just what his father had done, custom, not competition, fixed the price. With human nature as it is, however, men would always be found who attempted to overreach their neighbors. Since custom could not be relied upon, it became necessary for government to step in and to regulate the price. In point of fact, when mediæval prices were not regulated by custom, they were fixed by statute.

Economic theory thus discussed the question: what is the just or the natural price? It became in part a moral question, even though the answer must rest on economic considerations. The mediæval economists were no longer the general philosophers, as in classic antiquity, but primarily the theologians. Economics became a part of theology.

In framing his theory, the mediæval economist had to take business life as he found it. The characteristic fact of mediæval industry was the free laborer, the petty guildmaster. Slavery was fast disappearing, and accordingly, with the exception of a few of the early authors who were strongly influenced by the newly discovered writings of Aristotle, we find no defence of slavery. Again, since the whole economy was now based on industry and trade, the classical theory of business as an unnatural pursuit soon disappeared. Now arose the question: how should business gains be explained,— or, in other words, what fixes the price of the finished article?

There could be only one answer to this question. Industrial capital did not exist,— that is, not as an important or typical fact. Since there was no conception of capital, there could be

no theory of profits. The guildmaster employed his own work, on his own tools. The labor expended was the chief consideration ; and cost of production became the explanation of the reasonable price, and the guide to the legislator in fixing tariffs. To carry on business for the sake of making gains was therefore still deemed immoral, but to trade in order to recover the result of one's labor was justifiable. Money making as such is wrong ; money making to support one's self or one's family by the proceeds of one's industry is legitimate. All through the middle ages the economic theory objected to a man charging more for a thing than it was worth, or buying a thing cheap and selling it dear, or selling a thing at a higher price for credit than for cash. For in all such cases it was presumed that gains were made without any actual labor having been expended. It was only as business enterprise developed that the other constituent elements of gain were recognized ; but the theory continued to include them in the actual labor cost.

The other great mediæval theory — the usury doctrine — may likewise be put under the head of exchange. For usury was regarded as the price paid for the use of money, itself the medium of exchange. In an age where the productive employment of capital was unknown, the prohibition of interest did, on the whole, more good than harm. As commercial capital developed, the force of the prohibition was weakened by the economic theory of *damnum emergens* and *lucrum cessans* : if the lender could show that he had suffered any loss or had been prevented from making any gains through not having the money, he might charge a return. The wedge was slowly pushed farther in ; but it was not until industrial capital had developed at the close of the middle ages that a distinction was drawn between legitimate interest and illegitimate usury. In the guild system proper, where no capital was needed, interest was an anachronism.

The only other economic topic that was discussed in addition to these two fundamental points, was likewise one of

exchange,—that of money. Money became of such paramount importance that we find the treatment of money problems no longer confined to the theologians, but participated in by specialists. The mediæval writers on money form almost the only class of lay economists, pure and simple.

Mediæval economic theory, therefore, centred about the problems of exchange. Production was so simple that it was not discussed. In the absence of capital, there was no question of production on a large or small scale. Since the productive process was a unit, there was not even a discussion of the division of labor. Problems of distribution there were but few. Since there was no industrial capital, there were no profits; since the workman was in the main his own employer, there were no wages, or so far as wages were paid, they were paid by the consumer, and not by any capitalist employer. Even though the conception of rent to the landlord now appeared, the land was not normally bought and sold, and the landlord's rent was regarded, not as a separate source of income, but as a kind of property, like that of the ordinary townsman. Finally, problems of consumption attracted little attention. In an age when custom reigned supreme, and when unusual expenditure was deprecated as ungodly, the effects of social expenditure and the connection between social demand and production were so slight that they were scarcely noticed.

The mediæval economists therefore were confronted with comparatively simple problems. These problems they attacked with ability and with some degree of success. It was not long, however, before the economic conditions changed, bringing with them new problems and fresh attempts at analysis.

50. The Mercantile Doctrine.

Modern economics may be said to date from the close of the sixteenth century. This century is marked by one great fact which could not have failed to arrest attention,—the revolution in prices which went hand in hand with the intel-

lectual revolution due to the printing-press, with the religious revolution due to the Reformation and with the political revolution due to the weakening of the feudal system. The colonization of the new world led to a vast influx of the precious metals; the discovery of the trade routes to the East opened up new channels of commerce and revivified industry; the old régime of customary prices slowly gave way before the new force of competition; the guild system broke down as the power of capital made itself more apparent and as industrial conditions outgrew the narrow limits of the local economy. Thinkers like Bodin in France and Hales in England began to ponder these newer conditions of economic life and to discuss the relations of private wealth to public welfare. The economic theories from that time may be subdivided into three periods,—the mercantile theory, which first sought to crystallize the idea of the national economy; the theory of Adam Smith and Turgot, which represented the domination of the domestic system of industry, although in its cosmopolitan ideas much influenced by the doctrines of the Physiocrats; and finally the Ricardian theory, which marks the triumph of the factory system.

The mediaeval thinkers had centred their attention on the money supply, and had used every endeavor to bring the precious metals into the town and keep them there by controlling each individual bargain through manipulating the exchanges, and similar devices. The newer school of economists still emphasized the importance of the money supply, but owing to the changing conditions of trade were enabled to recognize the futility of the old measures. According to them, a surplus of coin is indeed desirable, but it can best be secured by an excess of exports over imports resulting in a balance of trade rather than by manipulating the exchanges so as to secure a favorable balance in each particular transaction or bargain. The first great economic controversies were those between the advocates of the Balance of Bargain and Balance of Trade theories. Because of their insistence on this mere exchange

of merchandise, the newer writers are usually called the Mercantilists.

In truth, however, this was only an incidental result of their teachings. The breakdown of the local economy and its replacement by the larger unit led thinkers to search for the true causes of national wealth and national greatness. They saw that this could be attained only by an increase of national production; and since industrial capital was now making its appearance, they emphasized the need and the value of national industry. Just as the older theory was disproved at the beginning of the seventeenth century almost at the same time by an Englishman (Mun), a Frenchman (Montchrétien) and an Italian (Serra), so the practical policy of national expansion and the abolition of the local restrictions on trade and industry were pursued by statesmen like Sully in France, Cromwell in England and later by Frederick the Great in Prussia.

Judged from the present point of view, the error of the Mercantilists lay in confounding a balance of exports over imports with a surplus of production over consumption (see below, § 200). At the time the theory was first formulated, however, an increase of national exports was indeed the most obvious method of measuring the increase of national production. In the early stages of capitalist enterprise and of international competition, the policy of national protection was suggested as a means of national industrial growth; but this system was itself an advance on the narrow exclusiveness of the mediæval town. The Mercantilists all clamored for "Free Trade," but their free trade meant a freedom of exportation, and a liberation of internal trade from the trammels of the local economy. The enlightened Mercantilists looked upon an abundant money supply not as the cause, but as the result, and therefore as the best indication, of industrial growth and national prosperity.

The problems which confronted the economists of the seventeenth and first half of the eighteenth century were thus prin-

cipally problems of production and exchange, from the point of view of the relation of government to the social structure. Hence the term political economy began to be used, and considerable progress was made in analyzing the problems of trade. The problems of distribution, however, were only just beginning ; the domestic system of industry was differentiating a wages class ; and the growth of industrial capital was only slowly bringing into view the recipients of profits as against the recipients of the rent of land. The slight theory that we find on the subject is incomplete and often incorrect. It was difficult for the writers amid these half-developed conditions to go beyond the surface fact that low wages seemed to mean low cost and therefore successful competition with other countries. It was reserved for the great thinkers toward the close of the eighteenth century to voice the newer ideas on production and distribution alike, and to disclose the elements of public prosperity, suited to the economic age in which they wrote.

51. Adam Smith and the Physiocrats.

If we were to sum up in two phrases the real contribution of Adam Smith to economics, it would be the theory of cosmopolitanism and the theory of distribution. Of these the one was original, the other partly borrowed ; but both were shaped by his economic environment.

The statesmen of the eighteenth century had been pushing the Mercantilist doctrines to an extreme. While the system of national economic expansion had marked an advance as compared with the mediæval system, the time soon came when the centre of economic interest was shifted from internal to external considerations ; and when what had seemed liberty from the one point of view now from the other appeared to be restriction. In certain countries at least the disadvantages of the system came to outweigh its benefits. Just as the guild system had originally been a spur to industry, but had ultimately become a drag upon it, so the mercantile system of regulation changed from a boon to a drawback. The advance

had consisted in emphasizing the national idea ; the retrogression consisted in accentuating the exclusive idea. In the well-meant effort of the legislator to further industry, he often throttled it. The government now interfered with everything, and often accomplished less than nothing. The colonies, instead of strengthening the mother country, broke loose entirely or weakened her. Trade was conducted on the principle that what one nation gained the other necessarily lost.

The very expansion of international relations, however, and the immense growth of the foreign market induced the eighteenth-century thinkers to take a broader view. Adam Smith and the Physiocrats, each influenced by the doctrine of Natural Law, endeavored to show that economic phenomena, like all others, were reducible to principle. The most important corollaries of natural law were to them private property and individual liberty. The liberty whose economic aspect they emphasized consisted of complete freedom in internal industry and in external trade. The demand for freedom of industry no longer meant freedom from the action of local government, but freedom from the action of national government as well ; the demand for freedom of trade no longer meant liberty of export, but liberty of import as well. Just as it was recognized that the various provinces of a nation benefited from freedom of exchange among each other, so it was claimed that the various nations of the world would equally benefit. Instead of national exclusiveness, economists demanded cosmopolitan freedom. Under the influence of the natural law each nation would then derive its maximum advantage.

This importance of the natural law of freedom in economics was emphasized by both Adam Smith and the Physiocrats. Although the Physiocrats were first in the field with the published system — the word Physiocracy denotes “the rule of nature”— Adam Smith taught the identical ideas at about the same time in his lectures at Glasgow. The doctrine of cosmopolitanism was in the air.

The other great theory — that of distribution — we owe primarily to the Frenchmen; not so much indeed to the Physiocrats as to the great statesman, economist and philosopher, who was only a half-Physiocrat himself, — Turgot. The leader of the Physiocrats — Quesnay, the court physician — struck by the abyss between the luxurious noble and the squalid peasant, concluded that agriculture was the only source of wealth, and the peasant the only productive member of society. In an age of periodical famine the food supply seemed to him of transcendent importance. Turgot only half accepted this idea; but taking his cue from the Physiocrats with their idea of natural law and their effort to trace the final distribution of the wealth created by the farmer, he analyzed industrial society as he found it, and saw that the product of industry was divided into separate shares. We now for the first time have a theory of capital, a theory of rent, a theory of interest and profits, a theory of wages.

This theory was adopted and developed by Adam Smith. He rejected, indeed, the doctrine of the Physiocrats that agriculture alone yields a net product. On the contrary, he generalized the conception, and maintained that all industry might yield a product. Thus we often speak of Smith as the founder of the industrial system of economic theory as against the agricultural system of the Physiocrats. But the fundamental doctrines of Smith in respect to the laws of distribution were similar to those of Turgot. Both Turgot and Smith lived in the midst of the domestic system of industry. This was more developed in England than in France, where the abuses of the guild system still lingered and where agriculture was more important than industry. Thus we find Turgot sharing in some points the views of the Physiocrats, while Adam Smith was able in part to cut himself loose. Turgot and Smith, however, attempted to explain the laws of rent, profits and wages, because now for the first time the capitalist employer was differentiated from the landlord, and because the wages class had assumed a new importance. The laborer, however,

still controlled the process of production ; the " manufacturer " with Adam Smith is still the manual worker.

Adam Smith, as also to a less extent Turgot, may therefore be called the theorist of the domestic system. He differs from the Physiocrats in accentuating the industrial rather than the agricultural element in wealth and production ; but he agrees with them in emphasizing the cosmopolitan rather than the national elements in public wealth. Because of this broader view they both attempt for the first time to study the whole range of relations between private property and public wealth, between liberty and industry.

52. Ricardo and Modern Economics.

Adam Smith wrote on the eve of the industrial revolution. It has often been observed that the year 1776 marked the publication of the *Wealth of Nations* and the Declaration of Independence, thus voicing the demand for liberty in industry as well as in politics. But it is equally worthy of note that the same year witnessed Watt's great discovery of the steam-engine. It took several decades for this and other great inventions to change the aspect of the industrial world ; but in less than half a century the transition had been accomplished in the leading industries of England, and was making rapid strides in the others. In France the process had scarcely begun ; in the other continental countries the domestic system itself was still contesting the guild system. Hence the thinker who could analyze the new system of industry could be sought for only in England, for in no other country did that system exist. Ricardo was the first theorist of the factory system.

It is no mere coincidence that Ricardo should have been a stockbroker. This man of genius, whose daily life trained him to observe the almost perfect sway of competition and the well-nigh complete fluidity of capital on the exchange, was well calculated to apply these considerations to a wider industrial world, whose characteristics were coming to be those of free competition and the supremacy of capital. Starting with a

study of the money question, Ricardo ended with an analysis of industrial society. The theories of cosmopolitanism and liberty he took from Adam Smith, but he developed them further, because this theory of free competition seemed to be even more applicable to the factory system than to the domestic system. The former theory of distribution, however, no longer quite sufficed. The manufacturer was now not the manual worker, but the employer who did no manual work. The "moneyed interest," which in Smith's time was only slowly forging to the front, was now becoming the dominant factor in English life. The antagonism between land and capital led to a new analysis of rent in contrast to profits. The mass of the working population had become wage-earners, but England's growing prosperity seemed to rest on the development of capital. Hence the law of wages was re-analyzed, in terms of profit, and the acme of truth seemed to be realized in the statement that wages and profits vary inversely to each other. Moreover, since capital had now assumed a new importance in the shape of machinery, the study of capital became largely a study of the economic effects of machinery. Everywhere in the civilized world of to-day the study of the theory of industrial phenomena goes back to the analysis of Ricardo.

The Ricardian doctrines themselves, however, have been modified in some points by recent investigation. It would be surprising if the century that has elapsed since Ricardo wrote should not have brought about changes in conditions which were soon reflected in theory. In some respects the theories have been amplified rather than altered. The economic life of the last half-century has been marked by three great facts,—the increased consumption of the masses, the revolution in the means of transportation and the tendency of capital toward concentration. The changes in consumption have led to a deeper analysis of the central problem of value, especially through the efforts of Jevons and the Austrian school. The revolution in the means of transportation has given free scope to the force of speculation, and has led to its more careful

study. The growth of capital has produced not only large-scale industry, but integrated industry, and has brought about a closer scrutiny of the monopoly problem.

In other respects, however, the theory has been modified rather than amplified. The Ricardian doctrine of free competition and natural liberty had two important practical corollaries: the one as applied to internal affairs meant *laissez-faire* or non-interference by government; the other as applied to foreign affairs meant free trade. The experience of the nineteenth century has conclusively shown that both these demands are of relative rather than absolute validity, and that under certain conditions they may prove detrimental rather than beneficent. This has led to a fresh analysis of the theories of liberty and competition, more suited to the modern changes.

Above all, however, the complete triumph of industrialism, which was in its infancy when Ricardo wrote, has brought into clear relief many tendencies which were then scarcely discernible. Ricardo had elucidated the law of rent, but his theory of profits was incomplete, the connection between interest and profits dimly appreciated, and the relation of both to rent not clearly apprehended. Above all, the position of the laborer and the relation of wages to profits were not thoroughly grasped. In the first flush of the new régime the function of the capitalist was naturally overestimated, and an undue emphasis put on production. So far as social reform was deemed at all practicable, it was thought to depend on the prosperity of the capitalist and the care taken by the laborers to marry late and have small families.

It was the social discontent of the middle of the century which was responsible for a change. Karl Marx did an admirable work in showing the essential relativity of economic institutions and in pointing out the influence of economic facts upon social and political life; and his keen criticism of existing theory and actual society did much to bring about a revision of the laws of distribution. While the socialist criticism, however, was fruitful, its constructive analysis was ere long seen to be as

one-sided as the one which it had endeavored to replace. It has been reserved for recent economic theory, especially in the works of Marshall, Walker, Clark and their followers, to take the saner view and to show how and why social progress and the growth of capital are intimately bound up with the advance of the mass of the workers. Thus the modern theory of economic life fits in not only with the facts of the business world but with the demands of social reform. The economics of to-day has finally reached the stage where it seeks to retain the cold impersonality of science and yet to reflect the warm glow of human interests and living ideals.

Book III.

Conditions of Economic Life.

CHAPTER IX.

PRIVATE PROPERTY.

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54. Origin of Private Property.

The institution of private property lies at the basis of modern economic life. It has become so ingrained into our modes of thought that we commonly regard it as a natural right. Nevertheless private property, like every other economic institution, is the result of a long evolution. It is a relative rather than an absolute category.

In the early stages of society the conception of private property is absent. Primitive man, like his brute ancestor, seized,

but soon consumed, his articles of food. Even when he learned to provide for the morrow, and like some animals to accumulate a store of provisions, he was able to retain control of them only so long as no stronger savage came his way. There may have been temporary possession, there was no recognized ownership. The earliest idea of property as distinct from possession was communal, not private. As the human hordes roamed about from place to place in the quest of food, they came to regard certain sections as their particular preserves, into which no other savages were admitted. Appropriation and user thus became the germs of property, but it was social and not individual user. As concerted action was generally necessary in order to secure subsistence, the food was distributed according to definite rules by the representatives of the group. Even religious objects, like sacred stones and feathers, were preserved by the group as a whole.

The first type of private property is found in the ornaments and the scanty articles of clothing. These were almost from the outset regarded as an integral part of the personality of the individual. The next step was reached when certain weapons were taken out of the general stock and associated with the exceptional prowess of some member of the group. The weapons, like the ornaments, were supposed in some way to reflect the personality of the individual, and when he died they were usually burned or interred with his remains. As civilization reached a higher stage, the movable shelters or wigwams and the scanty stock of tools and utensils were retained in the ownership of individuals. We can, however, scarcely yet speak of any differentiation of private property. Its social importance was insignificant in the extreme, and there was no motive for accumulation. After a narrow limit had been reached, additional ornaments became a burden, more weapons and tools were valueless. The group, not the individual, efforts were still the controlling factors in the economic life.

The decisive step was taken with the domestication of ani-

mals. As soon as it was discovered how to preserve flocks and herds, it was possible for the individual to dissociate his economic life, to a small extent at least, from that of the group, and by giving freer rein to his own powers to start on the path of independence and prosperity for himself and his own immediate circle. Private property now assumed a position of increasing importance: it created, as we have seen, the patriarchal family, and it engendered the distinction of rich and poor. Wealth now consisted of flocks and herds; personal belongings in the shape of jewelry and treasure were prized not only for themselves but because they could be bartered for live stock. The original "chattels" are the "cattle." Human dependents, moreover, were needed to care for this increasing wealth: the wives and the children of the patriarchal head were regarded as his private property, and where even these did not suffice, we find the beginnings of slavery. The slave (*famel*) soon became the most important element in the family. On the other hand, there was no private appropriation of land, because it was unnecessary. The herdsmen wandered, according to seasonal or climatic conditions, in search of fresh pastures, and the tribal customs were still sufficiently strong to prevent individuals from appropriating particularly favored spots in the general area.

Two points thus stand out clearly. First, private property consisted for a long time only of movables, animate or inanimate, that is, of animals, human beings, and personal chattels. A community which is continually on the march cannot develop property in immovables. Secondly, the origin of private property is to be sought in user and seizure. Compulsion and even rapine are frequently the starting-points of the accumulation of wealth. Yet this selfish accumulation is the means of attaining a higher stage of welfare for the community as a whole. It increases not only production but civilization. The ethical stage of a pastoral tribe is superior to that of a group of hunters. The institution of private property, while intensifying many of the unlovely characteristics of human nature, is

also responsible for those qualities, like thrift, foresight, frugality, energy, sobriety and sanity, without which no enduring progress was possible. Property was becoming private, but since the individual was still in large measure controlled by the group, the sanction of private property remained social in character. The individual was permitted to enjoy private property because it was recognized to be conducive on the whole to the interests of the group. From the very beginning, therefore, out of evil there came good; out of the violence inseparable from early private property there evolved the orderliness of a stable society.

55. Growth of Property in Land.

The next step was taken when the developed agricultural stage was ushered in. This had two important results: it greatly extended slavery, and it created private property in immovables. It extended slavery, because profitable cultivation of the soil was contingent upon an adequate labor force. Compulsory and gratuitous labor would naturally swell the gains of the owner. Increasing agriculture involved, under certain conditions at least, increasing private property in slaves.

It also involved the creation of private property in immovables. As fixed settlements replaced the early temporary abodes, the need and utility of more durable habitations became evident. Private property in houses, however, rendered possible on a much larger scale the accumulation of personal belongings within the house, and this accumulation of wealth was brought about by the increased earnings of agriculture as contrasted with flock tending. The evolution of private property in land, however, was far slower than in the case of houses. In a few instances, where geographical and climatic reasons made it difficult for the pastoral group to eke out a living in common from the soil, as in Norway, and where there was less fear of attack from organized bands of marauders, the individuals started out as farmers, each for himself and each

appropriating as much of the land as he needed. User soon hardened into ownership. So also when new colonies were planted by the offshoots of communities long acquainted with agriculture, the colonists, as in America, naturally brought with them the practice of individual land ownership and separate holdings. In most places, however, where the grazier slowly turned into a farmer, the communal practices disappeared only by slow degrees. Just as the nomad group had pitched its tents together and had allowed the flocks to graze in common, so now the village houses were grouped and separate plots of land in the surrounding area were temporarily assigned to the cultivators. These temporary assignments of different grades soon became permanent, although the method of using them was strictly subject to communal needs. For as population increased and the holdings were subdivided, the different grades of land were carved up into strips, the same individual often possessing sections in different parts of the arable area. This system of intermixed strips necessitated a whole body of communal rules in order to insure a proper cultivation. The strips were too small to be fenced off. In the open field system, as it was therefore called, not only was it clearly inadmissible for one man to use his strip as pasture with the risk that his animals might stray on the cultivated plot of his neighbor, but in addition far better results were obtained by planting large areas in the same way. Thus the mediæval village community or mark was based on the idea of common cultivation, and the original community of property was long preserved not only in the forests, the free use of which under certain restrictions belonged to every member of the group, but also in the pasture land, where every one had the right to graze his cattle, and even in the arable land which, after the crops were taken off, reverted to communal use.

While private property in land within the group was thus developing, there was another element at work, proceeding from above rather than from below. As the conquering tribes seized upon fresh tracts, it became of signal importance to

defend the settled agricultural possessions. This duty was assigned to the military chieftains, who in many cases were the wealthiest flock-owners. With the transition to agriculture, the old personal and tribal relations gave way to territorial and political relations. In other words, the state developed and the local divisions and counties were put under the protection of the over-lords. The tenants, or vassals, whether individuals or groups, now paid a portion of their agricultural earnings as the price of protection, and the military occupation of the district by the chieftain before long hardened into the institution of private property. The war lord became the landlord. The marquis was originally the defender of the "March." The property rights of the cultivator were held to be subordinate to those of the lord. Thus was ushered in the system of feudalism, based on the preponderance of the manorial lord and the hierarchy of social relations.

In some cases the cultivators lost their original prerogatives and dwindled into mere tenants without any property rights at all. In other cases they contrived gradually to free themselves from their rents and other feudal payments, while at the same time the common cultivation gave way, under the impulse of more modern methods, to individual tillage. In this manner was formed the peasant proprietorship of many European countries. The land became thus the private property of either the lord or the peasant, until finally with the development of industrial capitalism real estate was put on an equality with personal property. In America and many parts of Europe land is now bought and sold almost as readily as any kind of chattels.

Here again we notice the social sanction of private property. The origin of property in land as of that in flocks was often connected with force and fraud, but in this case as the other the community as a whole was benefited. The private property of the feudal chieftain meant the growth of security and social order, which formed the foundations of increased production. The development of landed property within the

communal group of cultivators was the result of the recognition of the social importance of individual action. As long as common cultivation brought about the best utilization of the fields, it remained the prevalent system; but when in more recent periods the application of capital to land made an intensive cultivation possible, the advantages of a more individual method were soon manifest. The old common or open fields were now enclosed, and each landowner, freed from what had become the shackles of a common cultivation, turned his own plot to the best use. Private property in land thus reached its climax, because it carried with it individual freedom of use. The augmented agricultural profits were due to increased production, so that private property here again redounded in the main to the advantage of the community. Real estate like personality, immovables like movables, have become private property because of the recognition by society of the social advantages of individual ownership.

56. Theories of Private Property.

Two important corollaries follow from what has just been said: first, the justification of private property is its social utility, and second, the extent of private property rights must always be limited by their social consequences.

The earliest theory of private property as found in some of the Roman writers is the occupation theory. The doctrine that property belongs of right to him who first seizes it is, however, one that can apply, if at all, only to the earliest stages of development. Where no one has any interest in the property, no one will object to the assertion of a claim by a new-comer. When property is without any discoverable owner, we still today assign it to the lucky finder. But when the property is already utilized by others, whether as groups or as individuals, or when the property is newly created by human effort, the assertion of the right of occupation involves a theory of force rather than of justice. The occupation theory may explain how the present legal title to certain forms of property origi-

nated ; it cannot serve as a justification of private property, except in the rare case of previously unoccupied or unutilized wealth. The mere fact that a person has seized a thing is no reason why he should retain it.

The next doctrine was the natural rights theory. Private property, so we were told by the philosophers of antiquity and the publicists of the later middle ages, is a natural right, a part of the law of nature. It will at once be asked, however, what is denoted by nature? If by nature we mean the physical and animal world outside of man, it is clear that the only laws of nature are the laws of the necessary relations of phenomena and that the only natural right is that which flows from the law of might or of the power which explains these phenomena. In this sense all civilization is an endeavor to escape from the original reign of natural law among brutes. Nature is here opposed to human progress. Private property, then, is unnatural because it is not found in a state of nature. If, on the other hand, by nature we mean the constitution of the entire universe, including man, and if it is contended that private property is natural in the sense that it is necessary to the full self-realization of the individual as the bearer of the world idea, the obvious rejoinder is that we are applying the term natural right to our temporary idea of what ought to be right, and that history unmistakably shows a continual change in our ideas of what ought to be. The great philosophers of antiquity upheld private property in slaves as a natural right. Much of what we to-day consider natural, our descendants will deem unnatural. Our conception of nature in this sense is essentially ephemeral and mutable.

Driven from this position, the natural rights school took refuge in the labor theory, and maintained that the real title to private property is derived from the toil and trouble experienced in creating it. Surely, it will be said, a thing belongs of right to him who produces it. But at once comes the reply : no one has created the land. As a consequence, we find thinkers of all ages, from Phaleas of antiquity to the disciples

of Henry George to-day, who contend that private property in land is unjust, while maintaining that private property in everything else is defensible. These critics, however, overlook the fact that the difference between land and so-called labor products is in this respect, at all events, one only of degree, because nothing is the result of individual labor alone. The carpenter, it is said, rightfully owns the table which he has made. But to what extent has he made it? The tree which affords him the raw material was not created by him; the axe with which the tree is felled is the accumulated result of centuries of invention expended by his ancestors; the stream along which the log is floated is not of his making. To pass over all the other intermediate processes, how long would he be secure in the possession of the tools he has used or of the product he has finished, were it not for the protection afforded to him by the law? And finally, of what use would the tables be unless there were a demand for them on the part of the community? The value of the table is as little the result of individual labor as is the value of the land. Society holds a mortgage over everything that is produced or exchanged.

Since therefore neither occupation, natural law nor labor gives an indefeasible title to private property, some philosophers were led to frame the so-called legal theory of private ownership which is in essence that whatever is recognized as such by the law is rightfully private property. Obviously, however, this is not an economic doctrine. Good law may be bad economics. The law generally follows at a respectful distance behind the economic conditions, and adjusts itself gradually to them. The legal theory tells us what property is, not why it is, nor what it should be.

Thus we are finally driven to the social utility theory. This is really implied in the preceding theories and supplies the link that binds them all together. In ancient as in modern communities, the individual is helpless as against society, however much under modern democracy society may see fit to extend the bounds of individual freedom. If we allow the individual

to seize upon unoccupied wealth, if we recognize the existence of certain rights in what are deemed to be the products of labor, if we throw the mantle of the law around the elements of private property,—in every case society is speaking in no uncertain voice and permits these things because it is dimly conscious of the fact that they redound to the social welfare. Private property is an unmistakable index of social progress. It originated because of social reasons, it has grown under continual subjection to the social sanction. It is a natural right only in the broad sense that all social growth is natural.

57. Limits of Private Property.

If then social utility is the real justification of private property, it is clear that the extent of private property rights must find its limit in social considerations. Take, for example, the modern problem of irrigation. The English common-law conception of private property—the property that reaches, as has been picturesquely said, from heaven to hell—is a product of a moist climate, of conditions where there is an abundance or superabundance of water, and where private interest could be safely depended upon to give the best results. But in the arid and semi-arid regions of our western empire neither occupation nor labor is deemed to give an equitable title to the river or the adjacent riparian lands. The new code of private property which is springing up in the West is one in which individual rights are clearly and forcibly held subservient to those of the community.

What is true of irrigable land in the West is true in varying degree of many forms of private property in the East. "May I not do as it listeth me with my own?" is a cry far less frequently heard than of old. Private property as a concept will no doubt always remain; but the content of the concept is continually changing. Property in human beings was at one time considered economically advantageous and morally defensible. Private ownership of the highways was not so long ago usual and justifiable. In the city of New York to-day the

process of extinction of private property in docks is fast going on. On the other hand, the stealing of electricity or the tapping of a telegraph or telephone wire is at present punishable as theft. If, as Carlyle tells us, no one believes what his grandfather believed, we may almost say that no one owns what his grandfather owned.

The right of private property is a privilege conferred upon individuals by society. It is recognized as beneficial in general because of the consensus of opinion that in the main better economic results can be secured by the application of the principle of self-interest. In the present stage of the evolution of human nature, private property constitutes the chief incentive to better and greater production. The test therefore is always the social test. Where, however, the reason of the rule fails, the rule itself must fail. That is, where in certain cases the results of private property are clearly opposed to the social interests, society is justified in restricting the extent of the property right. Thus the private ownership of patents and copyrights is everywhere granted only for a term of years, the right of the owner thereafter lapsing in favor of society at large. Again, while property in land is in general beneficial, immense private holdings may sometimes check, rather than further, social progress; and may lead to well-considered movements either to restrict their size, as in New Zealand, or to alter the form of the property right, as in the recent Irish legislation intended to convert the tenant into a peasant proprietor.

Interference with the existing rights of private property must always depend upon a convincing and irrefragable evidence of its necessity. For in the main private property and individual liberty have been the correlative products of human civilization. The limits of economic freedom and economic competition which we shall discuss in the following chapters will throw light upon the bounds of private property. We shall see that the maintenance of property rights depends on the existence and the beneficence of competition. Where

competition has given way to monopoly, the automatic control of property rights must be replaced by a more positive social control. Again, when the condition of equality, which underlies the theory of competition, is absent, competition may lose its beneficent force and the economic interests of society may demand the fixing of a limit to the exercise of private property rights. Certain idealists would go much further and advocate communism or socialism. The communist demands the complete abolition of all private property; the socialist asks for the abolition of private property in the means of production while retaining it in articles of consumption. Both are so extreme that in their well-meant endeavor to rectify undoubted abuses, they would forego the chief advantages and concomitants of modern civilization itself.

58. Content of Property Rights.

Property rights may be classified under five heads: the right of gift, the right of disposition by contract, the right of use, the right of bequest, the right of unlimited acquisition. Of these the first and second are well-nigh unquestioned. A man may not only give away his property as he chooses, but he may sell, lease, loan or pawn it. It is only where remnants of the old feudal law of real estate survive that we find any limitation put upon such rights. The third right is somewhat less absolute. As against the doctrine of "vested rights" of private property, the theory of "eminent domain" forms the entering wedge of social control which is being continually pushed further in by the principle of public policy. Again, man may commonly use his property as he likes. But he may not use it in such a way as to create a nuisance to his neighbor. The individual right is subject to social restrictions.

It is, however, around the fourth and fifth heads that the chief controversy has taken place. The right of bequest or inheritance is one of late growth. Long after private property was instituted its existence lapsed with the death of the original owner and the property itself reverted to the social

group. Long after the right of bequeathing chattels developed, there was no such privilege connected with real estate. Wills and intestate succession are everywhere the out-growth of the family,—the immediate kinship which, as we know, was the product of economic forces. To insure the perpetuation of the property beyond the life of the testator became one of the most potent factors in the desire of acquisition and in the economy of production. Where the economic and social importance of the family is great, we even find that the right of bequest becomes a duty, with the correlative right of inheritance on the part of the surviving members of the family. Such, for instance, is the *portion légitime* or legal right of the children in France and Germany, or the dower right of the widow in Anglo-Saxon countries.

With the weakening of the family sentiment in modern times and its restriction to a continually smaller group, the movement for a limitation of inheritance has begun to make some headway. The great development of modern progressive inheritance taxes and more especially of collateral inheritance taxes is an illustration of this tendency. When the rate of such taxation reaches 15% as in the United States a few years ago, 18% as in England, and 20% or even 25% as in some of the states of Switzerland and Australasia, we are on the high-road to a considerable limitation of the right of bequest. There is every reason to believe, however, that just as the kernel of the intimate family will continue to subsist, the movement will be arrested at that point where it might imperil the tendency to acquisition.

On the other hand, the right of unlimited accumulation of wealth has scarcely been affected. Even though it may be conceded that the heaping up of enormous fortunes may seriously strain the machinery of democratic government, there is an insuperable difficulty in fixing any point beyond which the further accumulation of wealth may be declared economically or politically dangerous. We refer here to wealth in general, honestly acquired. Private property in certain things

indeed is considered wrong, irrespective of amount; dishonesty is as reprehensible and as frequent (or as infrequent) in a small as in a large business. Great fortunes in general can be honestly acquired only by conferring great advantages on society; he who serves the community best will reap the greatest profits. The successful and upright business man retains the market only so long as he undersells his competitors, and to that extent benefits the consumers. To check profits would mean to check enterprise; to check enterprise would mean higher prices and greater sacrifice. The limitation of wealth as such is impracticable and economically perilous.

No one, however, would gainsay the essential reasonableness of the general feeling that prodigious inequalities of fortune are in the long run a menace to the stability of democratic virtues. But the solution of the problem cannot be found by opposing private property as such, or by erecting a barrier to the accumulation of wealth. It is futile to deny or to minimize the basic importance of private property on which the entire civilization of modern times is built. The economic ideal may best be expressed in the words of Aristotle of old,—that property should be private, but its use common. What he meant was to inculcate the idea of the public trusteeship of wealth, of the principle of the social responsibility of the wealth-getter. Economic progress is indeed intimately bound up with the institution of private property, and yet society is asserting a claim to be heard in its control and disposition. We are beginning to realize the duties as well as the rights of wealth. This moral obligation is based on the sound economic conception of social utility as at once the justification and the limitation of private property.

CHAPTER X.

COMPETITION.

59. References.

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tributive Process* (1888).

60. Nature of Competition.

Competition is in a certain sense the law of all life. Biology has made us familiar with the animal struggle for existence and has disclosed the process of natural selection, as resulting in the survival of the fittest. The chief form of this conflict is between the living being and the forces of nature, the struggle of the individual to accommodate himself to the environment, and the evolution under favorable conditions of those who survive by learning so to accommodate themselves. When nature is niggardly and her resources do not suffice for all, the struggle with nature is reinforced by a contest between the various groups or units to secure their share. It is here that competition emerges,—not a struggle against nature, but a conflict of one unit with another in order to enjoy the bounty of nature.

It is a striking fact that the earliest form of competition is a group competition rather than an individual competition.

At all events, without going back to the beginnings of life, it is reasonably certain that the first competition found among human beings, as indeed is still the case with most animals, is the competition of one horde or pack with another in the endeavor to secure the means of subsistence. Thus from the very outset the principle of mutual aid emerges, and competition between the groups is possible only because of co-operation within the group. These early forms of co-operation are seen in the American frontier life when the neighbors come in to the "log-rolling," the "raising" of the building, the "husking bee" or the "sugaring off" of the maple trees. With the development and differentiation within the group, the principle of natural selection, that is, of competition, makes itself felt as between the members of the group; but the process is slow because the welfare of the individual is deemed to be subordinate to that of the whole. As the groups become larger and more powerful, we notice continually higher forms of mutual aid, but we find at the same time more play given to the activity, or, in other words, to the competition, of the individual. Finally, in historic times the competition between nations is decided not only by the character of the state, as the most developed form of human co-operation, but still more by the results of the competitive struggle within the nation in developing those qualities of body and mind on which political power ultimately rests. Competition in one form or another is coterminous with life itself.

If competition, as a biological conception, is thus an explanation, in part at least, of progress, it becomes of even more importance when applied to the economic domain. The subject matter of economics is human relations to wealth. The difference between man and animals is not that man economizes wealth (for some animals do the same), but that he produces wealth. Competition therefore in human economics is not simply a contest to divide an existing sum, but a struggle to share in an increasing stock. The first requisite of securing an additional share is to produce more. In this

struggle to dispose of the increased product to the whole body of consumers, the victory will lie with those that can create better or cheaper products. The surest method of capturing the market is to undersell one's competitor. Thus competition, as a business principle, means a struggle to augment wealth through a lowering of cost. If competition in biology leads only indirectly to progress, competition in economics is the very secret of progress. Under normal conditions competition is indeed the life of trade. The individual competitor may incidentally amass a fortune, but if he does so honestly (and dishonesty is not an attribute of wealth, but of individuals, whether rich or poor), it can only be by conferring upon the community still greater benefits. He conquers who does best for society.

Competition in economic life, therefore, is a potent factor in the growth of capital. Working hand in hand with the principle of private property, it is the chief incentive to progress. Through it we secure the extension of the margin of utilization, the accumulation of the surplus available for human wants. Competition, moreover, is the great safeguard of society. It is the protection of the consumer against the high price which accompanies exorbitant profits; for it is the automatic force which reduces the gains of the inefficient and makes profits depend on low, rather than on high price. It evokes in individuals the fundamental characteristics of energy, thrift and power; and it harmonizes to a large extent the interests of the individual and of society, by making the success of one depend primarily on what he can accomplish for the other.

61. Forms of Competition.

The chief forms of competition are five in number,—commodity competition, individual competition, market competition, class competition and race competition.

(1) By commodity competition is meant the competition due to the existence of social choices. Every individual is continually debating with himself whether to purchase one

commodity in preference to another. Where he is on the margin of doubt or of indifference the slightest alteration in the price will cause him to substitute something else. The principle involved is hence called the principle of substitution. The vendor must constantly be on the watch lest any increase of price cause the disappearance of his sales. We substitute, however, not only one thing for another, but also one agency of production for another: in the crucible of economic wants everything is finally tested by its capacity to afford the greatest satisfaction. Not only will the consumer choose now this and now that commodity, but the employer will increase now his labor force, now his stock of machinery, so as to secure the best results. The least change in the rate of wages or of interest may lead him to substitute the one for the other. It is only by replacing the less efficient by the more efficient factor that the producer is able to induce the consumer to select one commodity in preference to another. Competition of factors of production is thus really an adjunct to commodity competition. Competition through substitution is hence important in that it fixes a maximum limit beyond which prices cannot go. Every economic factor, like every economic good, may be in either actual or potential competition with another. The existence of competition, however, implies the mobility or free interchange of the factors of production from enterprise to enterprise and from commodity to commodity. When the fluidity of capital and the transferability of labor are complete, the competition is absolutely free. When there are hindrances to this mobility, we speak of economic friction. The substitution of one commodity for another may be hindered by legal, social or economic causes. Under normal conditions, however, the competition is real and effective.

(2) The competition of individuals with each other denotes a rivalry, not between the producers of different commodities or between the different factors of production, but between the producers of the same commodity or the same factors of production. Under normal conditions competition

here puts every one on his mettle, and success is a measure of the contribution to the social fund. The more a laborer produces, the higher his wages will be ; the larger the output of a particular cotton mill and the lower the cost at which it can market its goods, the greater will be the benefit to the consumer as well as the advantage to the particular producer. Competition between individuals is in its results a struggle to enhance efficiency, to increase faculty, to multiply productive power, to augment ingenuity, in short, to develop economic personality. The more potent the personality, the greater will be the command over the powers of nature, the more rapid will be the development of the wealth which, although owned by individuals, yet inevitably ministers to the welfare of society.

(3) By market competition we mean, not the competition of individuals in the market, but the competition of markets with each other. Market competition includes, indeed, both commodity competition and individual competition in the sense that in every market individuals as well as commodities compete with each other ; but it is something over and above these. Every great city is continually striving to develop as a centre of distribution and exchange, in the well-founded hope that the wealth thus amassed will lead to productive efficiency in other lines. New York is competing with Baltimore for the grain trade ; New Orleans with Galveston for the cotton trade. Competition between markets seeks to overcome the factor of distance, and lies at the root of the problem of modern methods of transportation. Here again market competition leads to reduced cost, and the struggle for market supremacy can be fought to a successful issue only through more effective service.

(4) Class competition is the result of the differentiation of modern society into groups of producers. We have not only the great division into laborers and capitalists, but the further separation of the latter into the owners of agricultural, commercial and industrial capital — that is, landowners, merchants and factory owners — and the still further subdivision

of each class into minor groups. It pleases some writers, like the socialists, to erect this principle under the name of class conflict into the fundamental explanation of all economic change, and to regard it as involving not only the expropriation of the victim, but the ultimate downfall of society as well. In reality class competition, while as inevitable as the other forms of competition, is within proper bounds just as beneficial. Under a system of free competition capital will flow into industry in preference to agriculture only when industrial pursuits are more productive, that is, when the community as a whole sets more store by the products of industry. Whether the moneyed interest or the landed interest is more prosperous depends at bottom upon their success in making converts among the consumers, and the extent of conversion depends on what they can offer in the way of lower prices or better products. The laborers and the capitalists again represent competing interests, but the share of each in wages and profits depends ultimately, as we shall see, on their relative contribution to the common product.

(5) Race or national competition in its economic aspects is the final form of the modern struggle. The most marked characteristic of recent progress is the gradual substitution of peaceful rivalry of commerce for the sanguinary clash of arms. The modern weapon is not the javelin or the rifle, but the enterprise of the domestic producer aided by the exporter. Every nation that has reached commercial or industrial maturity endeavors to seek in the foreign market a profitable outlet for its own surplus productions. This attempt to secure a market is indeed responsible for an occasional war. In the main, however, the struggle to-day is one for cheapness, and in the end it is not the large army or navy but the most efficient producer that permanently retains the neutral market. It is not to be denied that both a large army and a large navy may be needed to protect the commercial or other national interests; but the foundation of military greatness in modern times is primarily economic, and when economic efficiency

has disappeared, military strength must also disintegrate. Great nations are now judged, not by the numbers of their battalions or ships, but by the volume of domestic production and foreign trade. Economic power represents potential military capacity. Here, again, national competition is salutary. The fundamental error of the old mercantilistic doctrine was the belief that what one nation gains in trade, the other necessarily loses. The modern doctrine is that every nation is helped by the prosperity of its neighbor, on the principle that the more wealthy the customer the greater will be his purchases. Both nations may gain, although one may gain more than the other. The foreign markets can be retained only by underselling; the profits of one country can be secured only by conferring these advantages on the consumers of the others. National competition, like personal and class competition, can benefit the individual country only by benefiting the group; it enriches one nation, but incidentally develops the others.

62. Dangers of Competition.

In describing the essential beneficence of competition in its various forms, we must not blind ourselves to its shortcomings. Some of these evils are inevitable. Where there are a contest and a victor, there must be a victim. There can be no struggle without some pang to the conquered. Suffering is an accompaniment of progress, just as sacrifice, at least in the sense of effort, is a prerequisite to enjoyment. In the animal world, where the sway of competition is relentless, the evil is pronounced. Progress there is purchased by the death of the victim. The fight is one of bestial instincts and brute powers,—the victory, however beneficial to the race, is secured at a tremendous sacrifice. Human competition, on the other hand, has in its economic form, as we have seen, something in common with, but also much in contradistinction to, brute competition. Economic competition may indeed involve the economic death of the unsuccessful competitor. The producer who is undersold by his rival will ultimately be compelled

to abandon the field. His adversary's success, which means progress for the consumer, spells his ruin.

There are, however, two points in which brute and human competition are unlike. In the first place the economic defeat may be only temporary. The producer who has failed in one business, often succeeds in another for which he is better fitted. His original failure may be the means of redoubled efforts and final victory elsewhere. His downfall is not necessarily his end, but may be his real beginning. In the second place, in economic competition there may be no death at all, but only a relative defeat in the sense that the progress of both competitors is unequal. Laborers compete with capitalists, one country vies with another; both may continually gain, even though in different proportions. In brute competition the struggle is only for consumption; in human competition the contest takes the form of production. In the end, indeed, the goal of both is enjoyment; but the means of reaching the end are different. This difference renders possible a participation by both contestants in the gains of production that are caused by economic competition.

Even with these qualifications, however, competition is often a painful process, none the less painful because the struggle has been transferred from the arena of bodily strength to that of mental capacity. The competition, moreover, may sometimes become so fierce that for a time at least it exhausts the powers of both competitors. This is the "cut-throat competition" of which we have heard so much in recent years, when, in the effort to capture the market, prices are reduced below the cost of production. The temporary advantages to the consumer are dearly purchased through the ruin of all the producers. Here we see competition at its worst, because all competitors are pulled down to the level of the most unscrupulous. In the same way there may be excessive competition between laborers, as when the necessities of the laborers compel them to accept the standard of the worst-paid or hardest-worked laborer. In the one case as in the other this unfair

competition endangers the perpetuity of a successful business or of a prosperous working class. The question then arises as to whether it is not possible to conserve the chief advantages of competition and at the same time to lop off some of its excrescences ; to maintain the social benefits while minimizing the individual costs. In other words the question is : what are the real limits of competition ?

63. Limits of Competition.

The problem may be approached from three points of view,—the level of competition, the maintenance of equality and the existence of quasi-public enterprises.

(1) The fundamental distinction between brute and human competition, underlying all the others that have been mentioned, is the point with which we have become familiar, namely, that while animals are governed by their environment, man, to a certain extent at least, can alter his environment. This is true not alone of the physical, but to a much greater extent of the socio-economic environment. The function of society is to raise the general plane of competition. Even in that extreme form of competition known as war, international agreements have succeeded in preventing a certain amount at least of wanton injury and needless suffering, without in any degree impairing the real intensity of the conflict. It is no longer true that "all is fair in love and war." In economic life, similarly, we often hear of unfair or cut-throat competition, with the implication that unworthy and reprehensible measures are being employed. With the development of business life there has been a continual movement away from the early brute-like struggle. The community to-day is frequently contrasting "fair" with "unfair" competition. Not only does the idea of what constitutes a "fair" competition change from age to age, but it differs at the same age in different occupations. The practices of our railways are very different from what they were a generation ago. The professional ethics governing the competitive charges of a lawyer or a physician scarcely resemble

those of a tradesman. The code of business morals is not the same in Wall Street as in Worth Street; the competition of farmers is often conducted on a different level from that of factory owners. Each group has its own standard, and the average man is satisfied if he conforms to it. The object of all progress is to elevate this standard and to give a continually broader interpretation of what is economically "fair." Conformity to the standard, however, involves some interference with individual liberty. Through the force of public opinion, reflected in business usage or legislative enactment, competition is being made to assume a higher form. Dishonesty is frowned down, factory laws are enacted, the scab and strike-breaker are reprobated, unscrupulous financing is punished. Competition is not destroyed, but its level is raised.

(2) The second consideration is that of equality. Perfect equality indeed does not exist, since variety is the law of life. Competition does its work, in the economic as in every other field, precisely by giving the victory to the better equipped. When the disparity between the competitors, however, is enormous, the community often fails to reap the essential benefits of competition. If one individual can produce a commodity for ten cents, and if it costs his sole competitor fifty cents, a selling price of forty-five cents will give him the command of the market; whereas with a more capable group of competitors he might be compelled to reduce the price to fifteen cents. The greater the equality between the competitors, the more substantial are the gains to the consumers. If the producer can in some way be rendered more efficient, so that the disparity will diminish, to that extent the community will gain. This is also, as we shall see, the principal argument in favor of the regulation of international competition through a protective tariff. In the same way the demand for a minimum wage and some of the other legitimate practices of trades unions are intended to bring the weakest nearer the standard of the strongest. In its best aspects it is a levelling up, rather than a levelling down.

The point to be emphasized is that the strengthening of a weak competitor may redound to the advantage not only of the competitor himself, but to that of the whole group, and ultimately to that of the community. Competition remains, but is rendered less unequal. Here, as elsewhere, indeed, there is always the danger that the community may suffer more from the restriction on the strong than it gains from the advantage to the weak. This, however, is the danger of all democracy, which must be guarded against in other ways.

(3) The third point is the existence of quasi-public enterprises. Shortly after the so-called "merger decision" of the Supreme Court in 1904, in which the Northern Securities Company was declared illegal, a noted lawyer stated publicly by way of criticism that no one any longer believed in the old adage that "competition is the life of trade." This remark rested upon a confusion of thought. Competition of a certain kind between railways is certainly not the life of trade. But why? Railways, like some other media of transportation and transmission of commodities, intelligence and power, differ from ordinary commercial enterprises in that they are quasi-public in nature. They carry on enterprises in which the public interest is so commanding that it must not be subordinated to private profit. In ordinary private business buyers and sellers make their individual bargains with each other; and while, as we shall see, open competitive prices tend to uniformity, there is nothing to prevent the more powerful or the more favored purchaser from secretly securing a lower price. Much of the profit of the business man, indeed, consists in this skill in purchasing on favorable terms; the very essence of usual business practice is this system of different prices to different customers. It is precisely the attempt on the part of railways to pursue this same policy which has created the "railway problem" in the United States. It is now recognized that the railway has no more right to make personal discriminations between its customers than has the government post-office. The wealthy merchant cannot buy

postage stamps cheaper than his smallest competitor; he ought not to be able to secure more favorable freight facilities. Competition in ordinary business means the different treatment of individuals, and is beneficial; competition in railway rates means discrimination between shippers, and is reprehensible. Competition in ordinary prices is the soul of trade; competition in railway rates is the death of legitimate trade. The only kind of competition that is desirable in quasi-public enterprises is the competition of service and of facilities.

Competition therefore is a force that must not be abused. It is applicable only in a slight degree to certain kinds of business, it works most beneficially in the presence of comparative equality, and its level of action stands in need of a continual elevation. Within these limits, and with these conditions, it is a vital and salutary force.

64. Substitutes for Competition.

As opposed to competition there are three possible regulators of economic phenomena,—custom, co-operation and monopoly.

(1) Custom at one time played a far greater rôle than it does to-day. In the more immobile communities of the Orient, as well as in the early middle ages of Europe, society was largely governed by status rather than by contract. People were born into certain conditions and occupations, and to emerge from these was difficult or impossible. In the rigidity of the Indian caste system we see the highest development of custom. Prices also were largely customary prices; the entire mediæval conception of *justum pretium* centred in the attempt to enforce the customary price. Capital was to a great extent fixed in land, and thus immobile; labor was not permitted to shift at will from place to place or from trade to trade. Nevertheless, even in the stage of the customary economy competition was not entirely absent. At bottom values were far more dependent upon the

working out of subtle and masked competitive forces than is usually conceded. To-day custom still plays a perceptible although fast-dwindling rôle in the determination of some economic phenomena. Even in the backward and primitive sections of our country the storm and stress of modern competitive life are making rapid inroads. The economic theory of industrial society now rests on competition, not on custom.

(2) Co-operation is in some aspects the opposite, but in others the corollary, of competition. We have seen that from the very beginning there was mutual aid within the group, in order the better to carry on the competition between the groups. There is even to-day no competition within the family, although a very lively competition between families. So in the same way the stockholders of a corporation co-operate, in order the more effectively to compete with another corporation. There are in fact all kinds of associations, voluntary and compulsory, including church and state, which fill out modern social life and which have more or less economic influence, working in perfect harmony with the struggles of the market. This kind of co-operation is compatible with competition.

Co-operation in its technical sense, however, means the abandonment of competition in distribution and in production. In distributive co-operation, the customers who are members of the co-operative societies select one of themselves as manager of the store and share any resulting profits. As they are expected to make no purchases elsewhere, there is no competition. Such co-operative stores are found principally in Great Britain. They have never flourished in America because they have been unable to supply the commodities as cheaply as the great department stores. In productive co-operation the object is to eliminate the capitalist and to remove competition between the workmen. The laborers elect one or more of their number to control the enterprise, and divide among themselves the gains. Co-operative production has achieved some notable triumphs in both Europe and America, but as

we shall see (§ 184), its scope is exceedingly restricted, and there are great obstacles to its general adoption as a substitute for competition.

(3) While co-operation implies an abandonment of competition either between consumers or between laborers, there is a third form of co-operation which implies abandonment of competition among capitalists or managers of business. This is usually called combination. If the combination is incomplete, however, it is still subject to the force of competition; if it is complete, it has become a monopoly. Monopoly therefore is the ultimate outcome of the cessation of business competition.

Monopoly has existed in many forms, and there are accordingly several categories of classification. Monopolies are either private or public, and public monopolies are either fiscal or social. Fiscal monopolies are enterprises conducted by government for fiscal reasons, like the salt or tobacco monopoly abroad. Social monopolies are enterprises conducted by government primarily for social reasons, like the federal post-office, or the South Carolina dispensary system. Private monopolies, on the other hand, are of three classes,—personal, labor and capital monopolies. Personal monopolies rest upon natural talent; a great actor or musician is in a class by himself. Labor monopolies rest upon labor organization and affect chiefly the employer, although indirectly the public. Capital monopolies are the ones with which the consumer in general usually comes into contact.

Capital monopolies, finally, are of four kinds,—legal, natural, franchise and ordinary business monopolies. (1) Legal monopolies were at one time common, through grant of the monarch to favorites. They are to-day found only in the restricted form of patents and copyrights. (2) Natural monopolies are those which depend on natural location, as in the case of certain specially favored lands, mines or waters. (3) Franchise monopolies take the form of quasi-public enterprises like railways, telegraph and telephone companies,

gas, water and electric light companies, whose profitable operation depends on the grant of a franchise to use the public highways, on, above or below the surface. Strictly speaking, they might be classed as a subdivision of natural monopolies. Here experience shows that competition is in the long run impossible and undesirable, either because, as in the case of railways, it leads to discrimination, or because, as in the case of the so-called municipal monopolies, it leads to an undurable interference with the streets or an unnecessary duplication of plant. (4) Ordinary business monopolies, finally, cover the great mass of modern enterprises known as trusts, and as to the essential monopolistic character of which there is room for doubt, as will be explained later (§ 149).

It is clear that private monopoly is a satisfactory regulator of price only in personal monopolies, where the consumer is glad to recognize and to foster exceptional talent, as well as in patents and copyrights where society is willing for a time to forego the advantage of competition for the sake of stimulating invention, and thus ultimately reaping the benefits. In all other cases of private monopoly, the consumer is to a certain extent at least left defenceless. Where there is no reliance upon competition, recourse must be had to some form of legislative control. Unregulated monopoly can therefore only in most exceptional cases be a substitute for competition.

Competition hence remains the permanent and controlling force of economic society. It is not all pervasive or uniformly advantageous. But in its fundamental aspect it lies at the root of progress, and when stripped of its excrescences and applied under proper limitations it is as beneficent as it is widespread. In the complex society of the present day, however, the limitations on the principle often assume almost as much importance as the principle itself.

CHAPTER XI.

FREEDOM.

65. References.

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66. Origin and Growth of Slavery.

Industrial liberty, like private property, is the result of a slow evolution. The ordinary picture of the freedom of the untutored savage is as fanciful as the rest of the fairy tales of our youth. Primitive man lacked freedom in three ways: he was in abject dread of nature, of his stronger comrades, and of the

social group. In his ignorance of natural phenomena he was a prey to all kinds of fear and superstition and an easy victim of the sorcerer or medicine man. Living in a society based on brute strength, he was at the mercy of the more stalwart savage. Dependent, as we have seen, on the horde or clan for existence, he was hemmed in by social customs that could not be infringed and by group prohibitions which it would be folly to evade. Civilization, and not primitive nature, is the creator of liberty. Knowledge has emancipated man from superstition, law and order have protected him from the oppressor, social progress has evolved in every phase of life a sphere of liberty, ever more secure from the encroachments of absolutism. Economic liberty like political liberty, freedom of thought like freedom of speech, are the product of the most advanced stages of society.

The freedom which is of special concern to the economist is of two kinds: bodily freedom as the basis of all labor, and freedom of economic action apart from control of one's own labor. The first involves personal liberty in the narrower sense and leads to a study of slavery. The second comprises a number of phenomena to be discussed in § 69. We take up first the subject of slavery.

The origin of slavery has until recently been much misunderstood. It is commonly stated that there are four causes of slavery: conquest, debt, crime and birth. Slaves, we are told, were recruited from the victims of war; from the ranks of those that voluntarily sold themselves or were unable to discharge their debts; from the criminals who earned a punishment only short of death; and from the offspring of existing bondmen. This statement is accurate enough, but it sheds no light on the real problem of the origin, the spread and the decline of slavery.

Slavery is obviously an institution designed to secure the services of others by force. It presupposes the need of labor on a moderately large scale. In the earliest stages of society well-nigh the only work done by man consists of hunting and

fishing, each in itself to a great extent a pleasurable activity. Every member of the community concerns himself with such work, and there is neither need nor room for compulsory labor. It is only when private property develops that we find the beginnings of slavery. In exceptional cases we can trace private property and intertribal barter among fishing groups, as in some of the Indian tribes on the North Pacific coast. Here the slave is utilized to a certain extent in work connected with fishing and in domestic labor. In general, it may be said that slavery can exist in the primitive economic stage only when subsistence is easy to procure without the aid of capital. When this condition is lacking, as among the Australians as well as among the great mass (although not all) of the American Indians and the Eskimos, slavery is unknown.

As we have seen, however, private property acquires social importance only with the pastoral stage. The slave can now be employed as the cowherd, the swineherd, the shepherd. The patriarchal family develops, and the slave becomes an integral part of the family group. Slavery, however, is still relatively insignificant. Even large flocks and herds can be tended by a few herdsmen, and the existence of a great mass of poverty-stricken freemen renders recourse to slaves unnecessary. The accumulation of large numbers of domestic slaves, moreover, is prevented by the exigencies of a roving existence.

When we come to the agricultural stage, the conditions change. Cultivation of the soil is arduous, and yet with an adequate force of laborers it is profitable. On a given plot of land every additional laborer means up to a certain point an increased yield; the existence of settled habitations renders possible the employment of domestic servants in various capacities. The more slaves, the more wealth and ease for the slave owner.

In the early stage of the agricultural period slavery is still relatively inconspicuous. After the immediate needs of the master and his family have been met there is little use for additional laborers. It is only with the growth of barter and

the increasing possibility of surplus products that it becomes profitable to augment both one's land and one's slaves. In other words, a market for agricultural production must develop, and the landed estates must be managed as business enterprises. Slavery becomes highly lucrative, and on the great estates there is now such a diversified activity that large numbers of slaves are employed not only as domestics but in all kinds of industrial work. Thus in Rome the development of slavery on an extended scale did not take place until the later centuries of the republic, when slavery on the *latifundia* became the dominant form of great business enterprise. In the same way slavery became an important factor in America only when the cultivation of tobacco and later of cotton on a considerable scale for the foreign market made the labor of slave gangs profitable.

It will be observed, however, that in addition to the existence of a market one other factor is necessary to the spread of slavery. This is a supply of free land. It is only when there are large tracts of virgin and unoccupied soil that slavery becomes at once lucrative and, from the point of view of the landowner, necessary. It is obvious that if any one can occupy and till on his own account a plot of land he will not voluntarily work for others, except for a remuneration so large that it will exceed what he himself can raise from the soil. The landowner who cannot secure voluntary assistance except on what he regards as ruinous terms resorts to forced labor. As long as there is a boundless expanse of good land available, slave labor, which implies a superficial cultivation, is still economical. It pays better to bring fresh land under the plough than to put more effort into old land; it is more profitable to increase acreage than to redouble effort. Even when the land becomes poorer through an exhaustive culture, slavery is still profitable in the older sections, not so much for the raising of produce as for the raising of slaves to be sold to the newer and more distant lands. To the landowner it is immaterial whether he secures his wealth from the produce of land

or of slaves: as long as the supply of fresh land maintains the value of slaves, their increasing numbers will counterbalance the decreasing fertility of his land. Finally, when slavery has become the dominant factor in production, it is profitably employed not only in agriculture, but also in industry.

Thus in classic Greece slavery developed with the growth of intermunicipal markets, and grew strong with the expansion of the colonies on all sides of the Mediterranean. The great city-states became not only the chief marts but also the chief breeders of slaves, and slavery finally dominated industry as well. With the advent of Roman sovereignty slavery received a new lease of life, and became lucrative not only on the Italian mainland but in the great stretches of subjugated states. As long as the career of conquest and fresh accessions of territory continued, slavery flourished. In the same way the European immigrants into the new world, whose ancestors had just seen the last vestiges of forced labor disappear at home, no sooner reached American soil than they introduced in all its rigor the ancient system of slavery. If the system dominated only agriculture and not industry, it is to be ascribed to the fact that a controlling industrial civilization had, for reasons to be noted in a moment, evolved from the stage of slavery to that of freedom, first in Europe as against the colonies in general, and then in the North as against the South. It was cheaper for the South to buy its industrial products in the free North or in Europe than to make them herself.

67. Decay and Disappearance of Slavery.

To the same cause, the conditions of supply of fresh land, must we ascribe the decay and the final disappearance of slavery. When the supply of new land diminishes, the economic disadvantages of slavery make themselves apparent. As Cairnes pointed out, there are three defects in slave labor: it is given reluctantly, it is unskilful, it is wanting in versatility. As long as there is an ample supply of exuberantly fertile soil, superficial cultivation suffices. But with every decade's culti-

vation of the same plot the productivity suffers and the need of more unremitting labor appears. The landowner now finds it to his interest to mitigate the rigors of slavery and by permitting the cultivator to do some work on his own account to induce him to labor somewhat more strenuously for his master. The slave in Rome gradually turns into the *colonus*, just as several centuries later the Anglo-Saxon thegn is replaced by the villein,—the slave by the serf. Serfdom differs from slavery chiefly in that the individual acquires certain personal rights and is attached to the soil. He goes with the land, but cannot be divorced from it. The serf is still bound to work a certain part of his time for the landlord. With the final exhaustion of free land, however, the landlord finds that he can derive more profit by freeing the serf completely and by letting him occupy the land on a fixed rental, in produce or in money. This process is gradual, differing according to the general economic conditions of each country. Ultimately, however, the last trace of serfdom disappears, and the cultivator becomes the hired man or the free tenant farmer.

There are generally five steps in this transition from slavery to liberty: (1) the acknowledgment by the master of certain personal rights on the part of the slave; (2) the grant to the slave of certain property rights, as the privilege of the Roman slave in later times to acquire a *peculium* or independent fund by working in his leisure moments for himself; (3) the conferring of the privilege of marriage, whereby the master abdicates the right of breeding human beings like animals; (4) the manumission of the slave, while reserving certain partial rights to his services; (5) complete emancipation and commutation of all services into a fixed money rental.

The transition from slavery to serfdom and from serfdom to freedom can be traced in Western Europe, where the increase of population and the resulting diminution of fresh land forced the adoption of better methods of cultivation. The process was accelerated by the growth of a free industry and commerce in the towns; and although temporary mutations

caused the landowners here and there to resist emancipation, serfdom was finally abolished, either because it was no longer really profitable, or because the community now recognized the greater need and value of the free industrial workman. In the first case, as in England, serfdom died a comparatively quiet death ; in the second case, as on the Continent, where the landowners were more tenacious of their rights, it needed a revolution to bring about the disappearance of the last traces of serfdom.

In America, where at first only the fringe of the arable area was occupied, the resulting inability to secure an adequate labor force through free workmen, apprentices or redemptioners soon led to the adoption of slavery, first of Indians, then of negroes. In the Northern states, where the land was poor and a better cultivation necessary, slavery never took a deep hold except on the plantations of Narragansett Bay and of the Hudson valley. In the South both climate and soil made slavery profitable. As the seaboard lands became poorer, the continuance of slavery depended on the continual acquisition of fresh lands, — a fact that led to the Mexican war and the attempts to secure Cuba. The opening of the lower Mississippi valley so augmented the price of slaves that not only the older seaboard states, but even many of the hill sections of the interior commonwealths where slavery would never have developed of its own accord, now found it to their interest to raise slaves for the market ; and from that time the entire South was practically a unit in favor of the “peculiar institution.” The South was forced into the conflict because it well realized that without fresh supplies of land slavery was doomed.

Emancipation came as a war measure ; but even without emancipation at that time slavery would soon have disappeared. Left to itself, without any chance of territorial expansion in the presence of a more vigorous and free industrial system, slavery would slowly have become unprofitable, and would have changed into some form of serfdom to be ultimately

merged into the more remunerative system of freedom. Lincoln's proclamation, like the Czar's ukase of the same decade, accomplished by a stroke of a pen what it had taken Western Europe centuries to attain. In America the transition was an economic revolution, in Russia a reform, because in the one country slavery, and in the other serfdom, was abolished. In both cases the change in the law only slightly anticipated the inevitable result of a fast-approaching change in the economic facts.

The disappearance of slavery is therefore not due primarily to moral teachings. The greatest moral philosophers of Greece defended slavery because they could not conceive of a social system without it; the clergymen of the South honestly appealed to the Bible because in their opinion it was necessary to social stability. The ethical defects of slavery were mentioned by many Roman writers, but it was not until its economic shortcomings were realized by teachers and public alike that slavery disappeared. The civil war was indeed borne on the waves of a great moral uprising, but human nature in the North was no different from that in the South, and had the climatic and economic conditions of the North been like those of the South, there would have been no such moral uprising. A higher morality, it is true, continually transforms social life, but in order to accomplish lasting results it must be in intimate touch with the great underlying economic facts.

With the virtual exhaustion of free land, slavery in modern society has gone, never to return. It is only in a few of the tropical colonies where land is still abundant that there is any possibility of its continuance; and if the colonies did not form so relatively insignificant an appendage of modern industrial states, the possibility might become a probability. It is unlikely that we shall see anything more severe than the carefully regulated contract labor of some of the English possessions. Even here, however, as well as in the case of the "culture" system of Java and the peonage of Spanish America, care must be taken not to permit a relapse into a state of virtual serfdom.

Slavery and serfdom have been defended on five grounds. (1) It is claimed that slavery is preferable to cannibalism ; that it is a great advance to spare the victim rather than to eat him. It is forgotten, however, that when the great development of slavery came, the enslaving part of mankind had long passed out of the cannibal stage. (2) It is contended that slavery protects labor, and that in the middle ages, for instance, protection was more important than freedom. This is, however, an assumption which from the point of view of the workman cannot be proven. (3) It is said that slavery inculcates the habit of work. There is no doubt that some of the negroes were drilled into comparative thrift and orderliness in the South. But this assumes that nothing else would effect the same result, — an assumption belied in all countries where free labor has developed independently. It also forgets that some of the negroes came from tribes where work was by no means unknown. (4) It is asserted that slavery permits the evolution of a leisure class. This, again, is based on aristocratic postulates. It completely ignores the possibility of a democratic development where leisure and culture will no longer be the possessions of a favored few. (5) Finally, it is claimed that compulsory labor is necessary for the economic progress of countries where the natives will not work. This argument overlooks the fact that the ultimate end of economic progress is man rather than wealth, and that every resource of modern civilization in the line of industrial and technical education must first be exhausted before the claim can be admitted. Labor is indeed necessary for economic progress, but a so-called progress which rests on the perpetual exploitation of the laborer is not worth having. Slavery, whether total or partial, exerts its pernicious and insidious influence on slave and slaveholder alike. The modern conscience refuses to permit it, and fortunately the economic facts are almost everywhere in harmony with the modern conscience. These economic facts rest on the disappearance of free land.

68. Liberty of Economic Action.

While bodily freedom is thus the result of a slow development, the liberty of economic action in general is also a recent product. Economic liberty of both kinds has been evolved because it has been recognized as conducive to wealth and general progress under modern conditions. As opposed to the theories of ancient and mediæval absolutism, with its continual interference in the economic life of the individual, the modern doctrine is that a man may commonly be depended upon for utilizing his opportunities and turning his energies to the best account ; that an adult of sound mind usually knows what is most advantageous for him, and that in making the most effective use of his own abilities he will ordinarily do the best for the community. It involves the substantial identity of private interest and public welfare, and it is to-day almost everywhere in the civilized world either an accomplished fact or a cherished ideal.

If we look more closely, however, we shall find that freedom is more than the mere absence of restraint or interference. In contrast to this mere negative conception of liberty, as advanced by Spencer and adopted by the average man, we must put the positive conception as framed by Green and elaborated by recent thinkers. Economic freedom, like all liberty, is not an attribute of primitive man, but has been hammered out by centuries of toilsome effort. Individual liberty is the product of social effort. If it is to be a constructive rather than a destructive force, if it is to minister to social progress rather than to social dissolution, it must be accompanied by two other conditions.

Of these the first is equality. By equality we do not mean absolute equality. A certain degree of inequality inheres in the nature of things. Men are born with an inequality of physical, mental and moral attributes which no amount of care can eradicate ; and as soon as private property develops, these natural inequalities inevitably produce their results in inequality

of possessions. The real equality that is important for economic purposes is threefold: first, legal equality, or the certainty that one man is as good as another before the law, and that his economic rights will be equally protected; secondly, equality of opportunity, in the sense that no man is shut out by legislation or social prejudice from free access to any vocation or employment for which he deems himself fitted; thirdly, such a relative equality, at least in the conditions of bargaining, as not to put one party to the contract at the virtual mercy of the other. Without such a threefold equality freedom becomes illusory; for liberty based on gross inequality means the liberty of the stronger and more unscrupulous to impose his will on the weak. Liberty without equality is the power of the one, but the subjection of the other. The liberty to invest one's capital in slaves was stoutly defended by the *ante-bellum* Southerner, but his liberty involved the other's slavery.

In addition to equality the growth of competition and the complexity of modern economic life have brought into prominence a second condition of liberty. The enormous power exerted to-day by the accumulations of capital as well as by the combinations of labor is in the present state of human development peculiarly susceptible of abuse. These abuses may be within the margin of the law, and yet none the less socially reprehensible. Unless great power is tempered by responsibility, it is apt to run wild. We are beginning to hear of the responsibilities of wealth, but the adage *noblesse oblige* applies to all forms of economic power, whether represented by wealth or not. What is needed, and what is gradually being developed, is the sense of social solidarity; in other words, the conviction that no one can really dissociate himself from the welfare of his neighbors, and that his every action must be judged by its influence on society at large. It was this idea that found vague expression in the "fraternity" of the French revolution; it is the same idea that is again more forcibly advanced to-day under other names. The application in the

economic sphere is no less valid than in others. Liberty without responsibility is license.

Real economic liberty, therefore, is constructive in that it implies not simply an absence of restraint, but such a positive complex of conditions, resting on law and custom, as to insure to the greatest possible number the opportunity of a free development of their faculties. Liberty, when based on equality and responsibility, means wealth for the individual and progress for society; liberty without equality and responsibility may mean advance for the few and retrogression for the many. Liberty as a negative concept is disruptive; liberty as a positive concept harmonizes society and the individual; the one is a menace, the other an aid, to lasting economic progress.

69. Various Kinds of Economic Freedom.

(1) The first and most obvious form of freedom is that of marriage and divorce. Marriage indeed is far more than an economic contrivance, even though the historical forms of marriage have been influenced by economic forces to a greater extent than is commonly recognized. Freedom of marriage especially is a product of the modern economic life. Restrictions on the right of marriage were in the middle ages an attribute of personal subjection, and were utilized as fiscal resources by the lord. Even with the advent of physical freedom, however, we find the right of marriage dependent on certain property qualifications, as in Southern Germany at the beginning of the nineteenth century. This also was merely a survival of aristocratic traditions,—like the still existing property qualifications for marriage in the case of army officers in continental Europe. Freedom of divorce, on the other hand, existed in early society, but was at first based on inequality. After the patriarchal and modern family had been constituted the husband could divorce the wife, but not *vice versa*. The newer right of divorce which rests on equality is in large measure the result of the economic emancipation of woman.

Into the wider ethical and religious aspects of this great problem the present is not the place to enter.

(2) Next we have freedom of movement. In the middle ages the right of internal migration was often restricted. Under the settlement laws in England, for instance, it was virtually impossible for a workman to leave his native parish. In modern times the growth of freedom has brought the right not only of internal but of international migration. The restrictions on emigration still existing in Russia, for instance, are a relic of mediævalism. On the other hand, the prohibition of immigration which is sometimes found in modern countries must be judged in the light of liberty in the positive sense, as explained in the preceding section. Chinese immigration into the United States, for instance, is forbidden. Cheap Chinese labor would undoubtedly help in developing the resources of the Pacific slope ; but the vital objection to it is the permanent inequality between the Chinese and the American workman. Immigration in general is to be welcomed in a young country like America with relative underpopulation, because even though the standard of life of the immigrant may be lower than that of the native, he or his children will soon reach the American level. The Chinaman, however, refuses to assimilate, and will not adopt American methods. He retains and perpetuates his lower standard, and thus, if present in sufficient numbers, would inevitably drag the American standard down to his own level. Freedom of immigration, which in this case means prosperity for the employer and comparative comfort for the immigrant, implies permanent degeneration for the American workman and thus ultimate economic decay. It is a specious liberty, because based on inequality.

When, however, there is any prospect of speedy equality and the immigration is not artificially fostered by foreign governments or interested transportation agencies, interference with the freedom of immigration is uneconomic. This was the error of the Know-nothings in the fifties, as it is of the anti-immigrationists at present in the United States. That the low-

class immigrant is the chief source of supply of the sweat-shops and in many respects complicates the labor problem is undoubtedly true and ominous. The remedy, however, consists not in abolishing immigration, or even in restricting it materially, but in raising the standard of pay and conditions of work through labor organization, public opinion and legal enactment, and in making this possible by increased production and successful enterprise. In a country, indeed, where the labor market is already overstocked, the force of this argument will be much impaired. But the time has not yet come in the United States when the immigrant in general is to be shut out or his advent materially restricted.

(3) We come next to the freedom of occupation. The right of choosing one's profession was in former times hedged in by all manner of barriers. At its worst the system of caste and custom prevented progress because it put men into vocations for which they were not fitted. Freedom of occupation insures as far as possible the right man for the right place, and this leads to enhanced production and better distribution. The only restriction which modern society permits is the evidence of fitness, in those occupations where incompetence would imply irresponsibility and involve injury to others as well as to oneself. The certificates required from doctors, dentists, engineers, plumbers, pilots and the like are not a hindrance, but an aid, to true liberty. The apprenticeship regulations of the trades unions, however, are sometimes good, sometimes bad. Where they are designed to insure good work, or even to prevent the degradation of wages and the workman's standard of life through the irruption of large numbers of underpaid apprentices, there is much to be said for the practice. But when the object is simply to keep out competent workmen and to erect a monopolistic closed corporation, as in the late stages of the guild system, the limitation is clearly indefensible.

(4) Another kind of freedom is the freedom of association. The chief forms of association for economic purposes are combinations of labor and combinations of capital. In classic

Rome, as in modern Russia, where both political and economic aims were sought we find a stern repression of labor associations. Even after the right of political and religious association had been won, however, combinations of labor were prohibited. Under the modern factory system such combinations have assumed the form of trades unions. It was not until 1824 in England, and considerably later in America and continental Europe, that the prohibition was removed. The legitimacy of union, as such, is now accepted because it is recognized that it tends to secure the real freedom of the laborer. The individual workman in a large factory is at a clear disadvantage in dealing with the employer; the union, as we shall see (§ 182), restores the equality by securing the right of collective bargaining. In the same way the right of free association of capital in the form of corporations and other combinations has been acquired chiefly in the past half-century. Here again, however, when the nominal liberty of association results in a "restraint of trade" or virtual monopoly inimical to the general interests, the community is justified in curbing its excesses whenever the contest involves a crass inequality or is conducted without any sense of social responsibility. The greatest care, however, must be observed in the analysis before the infringement of the right of association can be conceded. To abandon liberty because of a mere apprehended but imaginary inequality would be to sacrifice both liberty and equality. A clear case must be made out before the law should be invoked against the combinations of either labor or capital.

(5) The fifth category, freedom of consumption, needs only a word in this place. The sumptuary laws of old which prescribed in detail what should be eaten or worn were sometimes well intentioned, but always mistaken. By restricting the expansion of wants, they really checked economic progress. Modern society has abandoned such a system completely, and where it becomes desirable in the interests of the public health or safety to prohibit the use of certain commodities, like overripe fruit, or infected meat, or opium, the end is attained far

better by a prohibition of sale, under the police power of the state, than by a restriction of consumption.

(6) We come, sixthly, to freedom of production, including freedom of contract and enterprise. Here, again, the emphasis has been shifted in modern times. The world has outgrown the time-worn conception of the citizens as the children of an all-wise and benevolent paternal government. It has been realized that governments are not always benevolent and never all-wise, and that with the growth of capital and competition better results can be secured by the repeal of the complicated and often contradictory provisions which throttle production and check individual initiative. It was this that the French manufacturers meant when they told Colbert "*laissez-nous faire*" and thus introduced a celebrated phrase. That was indeed the necessary destructive process of pulling down the barriers which impeded progress because they checked equal opportunity. It has been found requisite, however, in recent times to modify both the theory and the practice of *laissez-faire* in order to safeguard the interests of various classes of society. The complex requirements of modern life have necessitated a governmental regulation of many business enterprises in behalf of producers, of consumers, of investors or of the general public. The difference between mediæval and modern interference is to be found chiefly in the fact that the one sought to prevent competition while the other endeavors to enlarge its domain and to raise its level. The only exception to the rule that rational modern interference is not designed to prevent competition is found in those few cases where competition itself becomes wasteful and inefficient. The modern aim, however, is always to increase liberty through the attainment of equality and responsibility. Factory laws give the operatives a fair chance; railway regulation attempts to secure equal treatment of shippers; supervision of banks, insurance companies and other corporations is designed to enforce financial responsibility. In all these cases interference is justified only as leading to a surer and greater general

liberty. We have to deal with the positive, not the negative conception.

(7) Finally, we have freedom of trade. This is virtually included under the last head, since trade is a species of production. It forms, however, so important a part of the subject that it has generally been treated separately. The modern age has seen the emancipation of internal commerce from mediæval restrictions of all kinds. The great controversy to-day centres about international trade. Here, again, the general hypothesis must be in favor of freedom. Free trade, however, is not necessarily and always beneficent. If the relative inequality of two countries in the production of a certain commodity is great, free trade may hinder in the weaker country the growth of an industry which might become relatively profitable or even highly necessary. Under such conditions protection, by building up the industry to the point where there will be a domestic competition, may help in creating that relative equality between the domestic and the foreign producer which will ultimately redound to the interests of the consumer as well. As we shall see later, however (§ 205), such a policy is defensible only when protection actually increases real productive efficiency, and when the undoubted intermediate economic loss does not outweigh the ultimate advantage. Only in such a case is interference with freedom legitimate, because only then is it in the interests of a more real and beneficent ultimate freedom.

70. Individual Liberty as a Social Concept.

We see, then, that in modern life liberty is a result rather than a cause. It does not mean simply the absence of restraint; for that is license, not liberty. All social progress is the result of a certain restriction of the liberty of some in the interest of all. These restrictions are imposed by custom, by voluntary association, by law. Good manners and social usages which prevent men from doing what they like are a mark of civilization. Associations like the church, the clubs and business unions lay down rules to which each member must conform. Government

enacts many laws whose wisdom is unquestioned and obedience to which is compulsory. In every case there is necessarily an infraction of liberty in the crude sense. Moreover, especially in industrial matters, the cry of individual liberty often becomes a mere shibboleth invoked by the individuals against others instead of themselves. The railway magnate restricts his own liberty by pooling arrangements, but objects to interference by the shipper. The slave owner wanted freedom of trade, but scouted freedom of man. The manufacturer demands protection against his foreign competitor, but objects to factory laws. The cotton grower acclaims the rise of prices brought about by manipulation on the exchange, while the spinner decries the liberty of speculation. The factory owner joins the selling bureau which restricts output or fixes prices, but objects to the "tyranny" of the labor union. The labor union adopts provisions relating to apprenticeship, the open shop and the boycott, but opposes lockouts and trusts. The lawyer refuses to consort with the "shyster" and the doctor with the quack, because they desire to maintain the standard of their professions; but they sternly reprobate the effort of the trades unionist to prevent the "scab" from reducing the level of his occupation.

Liberty, then, must be looked at from the social as well as from the individual point of view. The individual has become what he is largely through associated effort. This, however, inevitably implies a certain subjection of the individual to the group. The liberty which is compatible with social progress involves the readiness of the individual to work for a common end. If this readiness is not voluntary, it must be developed by persuasion or by force. All liberty is a balancing between the powers of anarchy and of tyranny. Individual freedom that is oblivious of the rights of others or of the best interests of the majority leads to an anarchy that is destructive of real liberty; group restrictions that are forgetful of the possibilities of the individual lead to a tyranny that is equally destructive of real liberty. From the economic point of view only that is

real freedom which is calculated to reconcile the greatest possible production in the group with the greatest possible consumption of every individual within and without the group. The liberty of one, therefore, must not endanger the economic progress of others.

Just as the political interpretation of liberty is democracy in government, so the economic liberty which is conducive to progress can exist only with a relative economic democracy. It implies at least economic opportunity, and opportunity depends on a certain degree of equality and responsibility. In this sense the best government is not that which governs least, but the one which secures the surest conditions of a wider ultimate freedom. Economic liberty in the last analysis is the result of action, not of inaction.

Part III.

Structure and Process of Economic Life.

Book I.

Value: General Principles.

CHAPTER XII.

THE MEANING OF VALUE.

71. References.

W. Smart, *Introduction to the Theory of Value* (1891), chs. ii-viii; J. B. Clark, *Philosophy of Wealth* (1886), ch. v, and *Distribution of Wealth* (1899), chs. xv-xvii; M. Pantaleoni, *Pure Economics* (1899), part 1, ch. iv; A. Marshall, *Principles* (1898), bk. iii; N. G. Pierson, *Principles* (1902), part 1, ch. i, § 3; W. S. Jevons, *Theory* (1888), ch. iii; F. A. Fetter, *Principles* (1904), part 1, div. A; T. N. Carver, *Distribution* (1904), ch. i; H. Sidgwick, *Principles* (1883), bk. i, ch. ii; A. W. Flux, *Economic Principles* (1904), ch. ii; E. v. Böhm-Bawerk, *Positive Theory of Capital* (1891), bk. iii, chs. i-ix; F. v. Wieser, *Natural Value* (1893), bk. i; C. M. Walsh, *Measurement of General Exchange Value* (1901), ch. i; L. M. Keasbey, *Prestige Value* (*Quart. Jour. Econ.*, XVII, 1903).

72. Original Meaning of Value.

Value is the Latin term corresponding to the Saxon "worth." The fundamental idea which underlies worth is capacity to satisfy a want. If we need a nail, but find a broken one, we say that it is worth nothing, — that it is valueless, or not avail-

able, for our purpose. Value or worth thus implies usefulness or utility. The nail is valueless for us ; if it "avails" nothing, it is of no use. Since value implies capacity to satisfy wants, there are as many kinds of value as there are classes of wants. Things have a scientific value, an æsthetic value, a religious value, a philosophic value, a political value and so on. The value with which economics has to deal is economic value,—a small subdivision of the whole. As this is a treatise on economics, we shall hereafter use the term value in the sense of economic value, that is, the value of anything for economic purposes. But just as we know (§ 2) that the economic life is not the whole life, so we must not confound economic value with value in general. When we defined economics at the close of section 4 as the science of value, it must be remembered that what is meant is the science not of all value, but only of economic value.

Incidentally we may point out the original dependence of moral considerations on economic facts. A thing was at first "good" in the economic sense, as we still employ the phrase a stock of goods and commodities. The ethical use of good came much later. In popular parlance we still speak of the broken nail as "no good," without desiring to pass any moral judgment on it. In the same way the original concept of "dear" was not ethical, but economic. A commodity may still be dear even if we do not love it. So also what is ethically precious to us was originally of economic importance ; we still speak of precious stones in this economic sense. To-day we esteem somebody, when originally we put a money value on him (*aestimare*, from *aes*, money). In modern times we appreciate a quality, but at first we set a price on it (*ad-premium*). In fact, so fierce was the struggle for existence among the early Romans, so important for their very stability was the quality of bravery, that the thing of chief value to them, the characteristic which "availed" the most, was "valor," a term which has now become with us of exclusively ethical import.

This close connection of ethics and economics must, however, as we have seen, not blind us to the fact that the real subject of our discipline is economic. The utility with which we have to deal is the economic utility, the capacity of a thing which we must economize in order to satisfy a want. The use of whisky may be ethically reprehensible, but as long as men desire it, and as long as they must be economical with it, that is, as long as it is not a free good, but an economic good, whisky will have an economic usefulness,—it will be used to satisfy the craving for drink ; and it will have a value in the market. The ethical judgment of the community may indeed affect the economic situation. The practice of drinking to excess may be visited with such severe social reprobation that the appetite for drink may be held in check, and the utility of whisky will then diminish because the desire for it will have decreased. The study of human wants is largely a matter of social psychology, and the character of human wants is continually being modified by moral considerations ; but when we are dealing with the serviceableness of a commodity for satisfying want, we are operating with economic quantities. The economist must continually bear in mind the moral aspects of the situation as modifying the conditions ; but, the conditions once given, the economic problem is a thing by itself.

As a preliminary definition, then, we may say that the value of anything is the expression of our estimate of its utility, meaning by utility its capacity to satisfy human wants.

73. Marginal Utility — The Law of Diminishing Utility.

It is obvious that this definition is incomplete. Iron is more useful than diamonds, yet diamonds are incontrovertibly more valuable. In what sense is value an expression of utility?

If a starving wayfarer suddenly spies an apple, it will have a supreme utility for him because it stands between him and death. If he finds a second apple, it will still be welcome, but will fill a somewhat less intense want. With every additional

apple his appetite will be more appeased, until with let us say the tenth apple he will reach the point of satiety and be on the margin of doubt whether to consume any more. The utility of each apple — its capacity to satisfy his desire — has diminished until the tenth apple is the last which affords any utility at the moment. The utility of this tenth apple is called final because it is the final apple, or marginal because on the margin of desire.

It is plain that the marginal utility of any apple depends on the quantity at one's disposal. The greater the quantity, the less keenly will he feel the particular want. If he had only five apples, the marginal utility of the fifth would be considerable because his last want satisfied would still be urgent. The degree of marginal utility depends on the strength of the want last satisfied, or, it might be said, on the urgency of the next unsatisfied want.

The second point to be noted is that at any given time the utility of each apple is equal to that of the last and therefore to that of any other (of the same size and quality). If the available supply is five apples, any one of the five apples may be considered the final or marginal unit, that is, the last unit in point of time. The wayfarer will lay his hands on any one of the five without particular choice ; whether he begins with one or with another is immaterial, because he knows that one is as good as another.

Thirdly, in estimating the utility of the entire supply of apples, we must distinguish between the total utility and the marginal utility of the stock. The total utility of a stock is obtained by adding the utility of each additional apple to that of its predecessor. It will accordingly grow until the point of satiety has been reached. Ten apples possess more total utility than five. The marginal utility of the stock, however, is always equal to the marginal utility of the final unit multiplied by the number of units. The marginal utility of two apples will be twice that of the second, of four apples four times that of the fourth. Here, as before, the marginal utility of the stock will

increase, but not up to the point of satiety. After a limit has been reached, the marginal utility of a stock begins to decline. The marginal utility of eight apples may be less than that of five, even though the total utility is undoubtedly more.

This can be made clear when we remember that we have many wants and that the degree in which things satisfy our wants depends on their relative importance. In addition to apples, the wayfarer needs other kinds of food, clothing and shelter. If he has only five apples, his desire for them may be so strong that he thinks of nothing else; but if he has eight apples, his desire for the apples may be overtaken by his desire for let us say three articles of clothing. If there were a hundred apples at his disposal, knowing that he had sufficient for many future meals, he would turn his attention almost entirely to still other needs. Air, for instance, is indispensable to life, but it is so abundant that it has no marginal utility at all. If the supply of air was shut off, however, he would abandon one by one his other needs, until finally his only desire would be for air. In other words, as long as he thinks chiefly of apples, which he will do as long as he can get only five, he wants all five; but as soon as he thinks of other things (which he will do when there are say eight apples) the less will be the importance which he will attach to the eight. The smaller the stock, the more rapid will be the rise in the marginal utility of each. If in the case of five apples the marginal utility of each is five units of satisfaction, that of the stock will be five times five, or twenty-five; but if in the case of eight apples the marginal utility of each falls to three, that of the stock will be eight times three, or twenty-four. Yet the total utility of eight apples is certainly more than that of five.

It is important to note, moreover, that the word margin is used in two senses, or, rather, that there are two different kinds of margins. When we speak of the marginal use of a commodity to any one, we think of him as on the brink of not wanting any more. He may reach the margin because, with the diminishing utility of each increment, he will, if the supply

is large enough, come to the point where there will be no consciousness of any economic usefulness at all. The margin becomes a margin between the economic world and the non-economic world, a margin between the sphere of economizing and that of unconcern or waste. On the other hand, when the supply is limited, the diminishing utility of each increment will be arrested at a point below which the consumer will prefer to abandon the use of an increment for something else. The margin here is a margin of indifference between an increment of one commodity and an increment of another commodity. Since these increments are not necessarily the same, the margin of indifference may be reached at a point where the tenth increment of one commodity balances the twentieth of another, where, in other words, the marginal utility of the first commodity is twice that of the second. Both marginal increments will still possess a positive utility. This second kind of margin is an economic margin, that is, a margin or border between two or more economic goods, not as in the first case a margin between economic and non-economic goods. The first kind of margin, where we compare different increments of the same thing, may be called the non-economic margin, because at the margin the utility is zero and the commodity is no longer an economic good. The second kind of margin, where we compare the same or different increments of different things, may be called the economic margin, because at the margin the utility of each thing is still measurable and appreciable. We shall have repeated occasion to call attention to the errors that result from confusing these two kinds of margins.

To recapitulate: the utility of a commodity is called marginal because the desire for additional quantities must sometime reach a limit or margin as compared with the desire for other commodities. There is always one unit in the supply which marks the margin of this desire; and with every change in the supply or the desire, the margin will move up or down. This unit is called the marginal unit or increment. With a fixed quantity the utility of each unit or increment is for prac-

tical purposes equal to that of the marginal unit, because if any unit were withdrawn the final unit would naturally be put in its place. The real loss would be the loss of the marginal unit.

Value, then, is not simply the expression of utility in general, but of marginal utility. When we speak of the value of a commodity, we think not of its usefulness in general, but of the utility of a definite quantity; and in so doing, we think not of the total utility of this quantity taken by itself, but of its marginal utility as compared with that of a definite quantity of other commodities.

74. Individual and Social Value.

Value as a universal conception would be true of the individual living apart from society, if there were any such beings. The estimate put by the individual on one commodity as compared with another is the foundation of all value. Robinson Crusoe would assign a value to apples as compared to nuts, the value of each being in agreement with their marginal utility to him. As a matter of fact, however, we live in society, not on a desert island. Economics, as a social science, treats of the relation of man to man, of class to class. The value with which we deal is therefore the result of social forces. It is society as a whole which sets a value on things. Society is indeed composed of individuals, but it is the aggregate of individual wants that shapes value. The want of the individual affects value only as it influences this aggregate. If a rich maniac, for instance, should offer a thousand dollars for a common spoon for which every other person would give only five cents, his subjective estimate would have no appreciable influence on the value of the spoon, and if he actually paid a thousand dollars, society would be justified in locking him up and in punishing the seller. Of course, when the supply of an article is limited and the desire of the individual such that the article possesses a peculiar utility for him, not shared by the rest of the community, his subjective estimate may seriously influence its value. This is true, however, only for the reason

that because of the limitation of supply the subjective estimate of the single individual forms so large a part of the collective desire. To get my ancestor's watch out of pawn, I may pay if necessary far more than its value to any one else. The border between an enthusiastic collector and one with a "screw loose" is sometimes a narrow one. Ordinarily, however, the desire of any one individual forms only an insignificant part of the collective desire.

Value, therefore, depends upon the fact not only that each individual measures the relative urgency of his own various wants, but that he compares them consciously or unconsciously with those of his neighbors. I not only measure the relative satisfaction that I can get from apples or nuts, but the quantity of apples I can get for the nuts depends on the relative estimate put upon both by the rest of society. If an apple is worth twice as much as a nut, it is only because the group that uses both apples and nuts finds, after comparing individual preferences, that the desire unsatisfied by the lack of an apple is twice as keen as that unsatisfied by the lack of a nut. Value, therefore, is not merely the expression of marginal utility; it is the expression of social marginal utility.

This serves to explain how a thing which has no direct utility to the individual may yet possess a value for him. If by chance I secure a locomotive, it is in itself useless to me. If, however, I can dispose of it to a railroad company, it acquires a value, because in other hands it will serve a social purpose. The locomotive now has an indirect utility for me because through it I can secure things of direct utility. Its indirect individual marginal utility to me is the result of its direct marginal utility to the community, that is, to that part of the community where marginal comparisons are made between locomotives and other goods. Of all the valuable things in existence only an infinitesimal fraction possesses any direct utility for any one man; yet the more of them any one has, the richer he is, provided he can dispose of them to others. Thus, while social utility is made up of a combination of individual utilities — that

is, while a thing cannot be useful to society unless it is useful to the individuals that compose society — the indirect marginal utility of a thing to any individual is the result of its social marginal utility. To a member of society the indirect marginal utilities form the chief element in value. Hence in society the individual marginal utility which controls value may be said to be the reflection of social marginal utility. Our readiness to part with nuts or apples will depend not so much on the degree in which we as isolated individuals prize nuts as compared with apples, but chiefly on the degree in which other people prize apples as compared to nuts. This estimate is the controlling consideration. Value is a result of the community of wants.

The problem with which we set out in the last section is thus solved. There are, in fact, two solutions, — one depending on the distinction between total utility and marginal utility, the other depending on the distinction between individual utility and social utility. As to the first, iron in the abstract is indeed more useful than diamonds ; but a pound of iron does not satisfy as many or as urgent wants as a pound of diamonds, and it is therefore not so valuable, even to an isolated individual. When we say that iron is more useful than diamonds, we refer to iron in the abstract. When we say that iron is less valuable than diamonds, we refer to a definite quantity. It is therefore true that a commodity may possess more utility and at the same time less value than another ; but the utility to which we then refer is not the marginal utility. The total utility of eight apples is greater than the total utility of five, but the marginal utility may be less. When the Dutch monopolists destroyed a portion of the colonial pepper crop to increase the price, the total utility of the supply fell, but its marginal utility and its value rose.

At the same time it may conceivably happen that to any one individual a pound of iron may in and of itself be more useful than a pound of diamonds. Yet this fact will not control value. For the indirect utility of iron is far greater than its

direct utility, in precisely the same way that the wants of a community are more important than the wants of any individual. Even though a pound of iron may at a given moment be more directly useful to an individual, it is always true that a pound of iron does not satisfy as many or as urgent social wants as a pound of diamonds. When we speak of the value of iron or of diamonds, we refer to their social utility, not to their individual utility. Or, to put it in another way, the marginal utility of iron or diamonds to a man living in society is a reflex of their social utility. Therefore iron is always less valuable than diamonds, because the social marginal utility of a pound of iron is always less than the social marginal utility of a pound of diamonds. Value in society is the expression of social marginal utility. Social economics deals only with this kind of value.

75. Value in Exchange.

Since value is a social conception depending on a comparison of divers goods, and since this comparison is ordinarily made in society by their transfer from man to man, it is clear that the value with which economics has to deal is exchange value, or value in exchange. Speaking roughly, we may say that the value of anything is what it will exchange for. Speaking strictly, we mean that the value of an article may be expressed in terms of any other article for which it will exchange.

Earlier writers made a distinction between value in use and value in exchange, but they confused value in use with total or absolute utility. As soon as we grasp the fact that the utility with which economics deals is marginal utility, the old distinction between value in use and value in exchange disappears. Other writers sometimes use the terms subjective and objective value when referring to individual and social valuation respectively. The terms are awkward, because they obscure the fact that at bottom value is not an external characteristic of a thing, but an expression of its relation to an individual. Value is the result of an estimate of a quality, not the quality

itself. In this sense there is no objective value. It can be called objective only in the sense that when society attaches a value to a commodity it is something to which the individual or subjective valuation must conform in making an exchange.

The study of Robinson Crusoe is important as reminding us that the foundation of value is independent of exchange. Strictly speaking, it is independent of exchange only as between man and man, not as between commodity and commodity or between want and want. Crusoe exchanges or weighs off in his mind apples and nuts, and thus gets an estimate for their value to him. "Value in use" is thus really only one kind of "value in exchange," although it is a peculiar kind of exchange. As soon, however, as we deal not with Crusoe, but with men in society, we find that not only does the individual as before measure one want against another, but that the satisfaction of that want depends upon the estimate put by other individuals on their respective wants. Value in individual economy always presupposes at least two things; value in society presupposes in addition at least two men. In other words, value in society — that is, in actual life — is value in exchange; and this value in exchange is nothing but the expression of its true value in use to the members of the social group, that is, of its marginal utility.

Strictly speaking, the value of a thing exists only at the moment when it is exchanged for or compared to something else, just as the utility of a thing exists only at the moment when it satisfies, or is conceived of as satisfying, a want. Since, however, men learn by experience to attribute utility to things which can gratify a want, so they attribute value to things which they know can be exchanged for other things. Thus value comes to mean exchange power, or the estimate of exchange power.

It is accordingly plain that when we define the value of a thing as the expression of its social marginal utility, we mean that value is an expression of its exchange power; for exchange power is based on the comparative estimate of direct

social utility, which gives to every owner of the commodity the indirect individual utility that fixes value in society. As we can estimate this exchange power only by comparing one thing with another, value is sometimes, but less accurately, spoken of as a ratio, or a ratio of exchange. Value is indeed relative, but it is not a relation or a ratio; it is an expression of our estimate of the relative exchange power of anything.

76. Value and Price.

Since value is an expression of our estimate of relative exchange or purchasing power, the value of anything can be ascertained only by comparing it with other things. When we measure a commodity in terms of some one other commodity, we speak of price. If the value of a cow is equal to that of five sheep, we say that the price of a cow is five sheep. In civilized society we have become accustomed to measure all values in terms of a single commodity called money; so that by price we now mean the money value of anything,—the amount of money for which it will exchange.

Value and price have thus come to be interchangeable terms. Sometimes, however, value is used in a special sense. Thus we speak of a thing as selling for less than its real value, or of a shopkeeper charging more than it is worth, when we mean that the price to others in the long run will be higher or lower. So the department stores advertise "great values" when they mean that the goods are sold at exceptionally low prices compared to the seller's estimate of their utility to the public. Ordinarily, however, when we say a thing is worth five cents, we mean that the price is five cents.

While the value of anything is thus virtually equivalent to its price, we must not confuse values in general with prices in general. When we conceive of a single commodity, like money, as a standard, we consider it as a fixed point, not subject to fluctuation.¹ Prices hence may rise or fall with

¹ As to the difficulties that arise from fluctuations in the money standard, see, below, § 191.

reference to this standard. But we cannot speak of a general rise or fall in values, because there is no fixed point. Cows may rise in value as compared with sheep, but sheep themselves may fall as compared with poultry, and poultry may vary as compared with something else. Value expresses a relation ; hence, if the value of some articles diminishes, it means that the value of others must increase. But if the price of certain articles falls, it does not follow that the price of other articles will rise. There may be a general rise or fall of prices, because we measure prices in one commodity, money ; there cannot be a general rise or fall of values, because money also has a value.¹

77. Value and Marginal Increments of Wealth.

We have thus far spoken of value as the expression of social marginal utility. To be more exact, it should be stated that marginal utility (and hence value) depends not upon the commodity as a whole, but upon the marginal increments of wealth in the commodity. This might be called Clark's law, from its first formulator, Professor John B. Clark.

To prepare the way for grasping this principle, we must call attention to several points. In the first place, the rapidity with which the utility of successive increments of a commodity diminishes depends largely on its combination with others. One scarf-pin is all a man needs, the utility of a second would be doubtful, a tenth would be useless. But with many cravats, we can use more scarf-pins. Put before the same man a finely cooked dinner or a loaf of bread, and not only will he enjoy the first more, but he will be willing to pay a higher price for the bread as a part of the dinner.

Secondly, in all commodities except the simplest of a class there is always to be found a combination of various utilities. A plain deal table suffices to hold books ; one of polished rosewood satisfies a more refined want and possesses an

¹ When Wall Street speaks of a "general slump of values," it means only a fall in the prices of securities traded in on the stock exchange.

additional utility. I may have an ample supply of boots, yet a new pair with golf rubbers in the sole may be desired for that reason alone. Each new utility in an object practically makes it a new object. All commodities are virtually made up of such combinations or bundles of utilities.

Thirdly, the marginal increment of a man's wealth is made up of varying proportions of such separate utilities. Every one purchases first necessities, then comforts, then luxuries. But what is luxury to one man may be almost necessity to another. What is bought with one's last dollar is the marginal increment of enjoyment; but the more dollars we have, the less the utility of each. To a man with a very small income the final dollar may afford the luxury of a few pints of beer; to the rich man the dollar spent in beer is not marginal. His marginal increment of wealth may take the form of luxuries like champagne or pictures, but they will generally consist of particular attributes of commodities. It may be the fashionable cut of his garments, the last touch given to the delicious dinner by a *cordon bleu*, the sumptuousness of his books, the elegance of his carriage, the artistic quality of his china or silverware. The garments, the dinner, the books, the carriage, the china, — each possesses various kinds of utility; but what makes the particular objects desirable to him is not the primary, elementary utility in each, but the final marginal utility.

Fourthly, since each of the separate utilities of an article becomes at a certain point marginal to different classes of men, its value depends not upon its marginal utility as a whole, but upon that of the increments of utility each estimated separately. If value were the measure of marginal utility as a whole, all but the simplest commodities would be worth far more than they are. Take, for instance, a fine automobile. There are at least five different qualities which give it a value. These are, in the order of importance, (1) power to afford locomotion; an old two-wheeled cart would do as well; (2) freedom from jolting and protection from sun and rain;

a top-buggy would do this: (3) size; a plain coach would possess this: (4) elegance of finish; a fine equipage would have this: (5) speed and exhilaration; only a motor car will give that. In such a vehicle there would be, so to speak, at the same time a cart, a buggy, a coach, an equipage, a self-propeller. The most important or primary utility is the power to afford locomotion. Without this it would be of no use at all. The next quality in importance is comfort; if it has no springs, the vehicle will not be used for pleasure driving. And so on with the other qualities; each has a diminishing importance. Yet the value of the vehicle is not the reflex of its marginal utility as a whole. For the primary quality of locomotion alone the rich man would, if necessary, pay an immense sum. The mere fact of riding, which might be a luxury to a poor man, may be a necessity to him. The second utility—comfort—would be less important than the first, but might still be prized immeasurably by him. And so on with the other qualities. So that, if need be, he would pay a fabulous amount for the vehicle.

As a matter of fact, however, what he values in the particular automobile is the fifth or final utility, that of self-propulsion. He probably has buggies, coaches and equipages galore. The fourth, third and preceding utilities represent less value because each utility is marginal in turn to a class of smaller spending power. If automobiles rose in price, there would be fewer of them, but more equipages, because the particular quality which differentiates an equipage from an ordinary coach would be a marginal utility within the reach of a larger but less wealthy class. If equipages advanced in price, more plain coaches would be built; if the price of coaches rose, more buggies would be built. In each case the vehicle is desired by a particular class for a new utility, which is to that class marginal. Each successive class, however, is poorer than its predecessor, and the gradations themselves become less. There is more divergence between a multi-millionaire and a man of moderate wealth than between the

latter and a man of simply comfortable means. Thus there will be a greater difference in price between automobiles and equipages than between these and coaches, more between a coach and a buggy than between a buggy and a cart. In each case the special utility for which the vehicle is bought is a marginal utility to a poorer class. When a rich man buys an automobile, he does not pay the immense sum which he would, if necessary, give for the mere privilege of locomotion. He pays the small price which a poor man would pay for a cart, plus the somewhat larger addition that a slightly less poor man would pay for the difference between a cart and a buggy (comfort), plus the still greater increment that a man of moderate means would pay for the difference between a buggy and a coach (size), plus the yet larger increment that a fairly wealthy man would pay for the difference between a coach and an equipage (elegance), plus the final and largest increment that he and his class are willing to give for the marginal utility to them of the automatic attachment. All these increments added together are far less than what he would, if necessary, pay for the privilege of locomotion,—the cart element in the automobile.

When, therefore, we say that value or purchasing power is the expression of social marginal utility, it is clear that what we mean is that value is the expression of the social marginal increments of utility which are bundled together or united in anything, and each of which is marginal to a different class.

CHAPTER XIII.

THE MEASURE OF VALUE.

78. References.

W. Smart, *Introduction to the Theory of Value* (1891), chs. ix-xiv; J. B. Clark, *Philosophy of Wealth* (1886), ch. xxiv; A. Marshall, *Principles* (1898), bk. v, ch. xiv; N. G. Pierson, *Principles* (1902), part I, ch. i, § 4; W. S. Jevons, *Theory* (1888), ch. iv; E. v. Böhm-Bawerk, *Positive Theory of Capital* (1891), bk. iii, ch. x; F. v. Wieser, *Natural Value* (1903), bk. v; A. W. Flux, *Economic Principles* (1904), ch. iv; C. M. Walsh, *Measurement of Exchange Value* (1901), ch. i; J. A. Hobson, *Economics of Distribution* (1900), ch. ii; S. N. Patten, *Dynamic Economics* (1892), chs. ix, x; D. I. Green, *Pain Cost and Opportunity Cost* (Quart. Jour. Econ., VIII, 1895); A. C. Whitaker, *History and Criticism of the Labor Theory of Value in English Political Economy* (Columbia Series, XIX, 1904).

79. Meaning of Cost.

Value, as we have seen, has a meaning only when attached to a definite quantity of an article. The value of iron means nothing; the value of a ton of iron means something. In order to ascertain why anything has value, we must therefore inquire not only why we attach any importance to it as compared with other things in general, but also why a definite quantity of that article satisfies more or less of our wants than an equal quantity of something else. We must regard not only our desire in the abstract, but our desire for a particular amount. That is, in analyzing value we must take into consideration not only the demand, but the supply; for the effective demand for an article which lies at the root of value is itself influenced by the supply. Of two equally useful articles we shall be more concerned in securing the one the

supply of which is limited than the one the supply of which is abundant.

What regulates supply? In the last resort it is the forces of nature as utilized by the energy of man. In some cases nature gives so abundantly that man need do nothing; in other cases nature is so niggardly that his utmost effort fails to augment the scanty stock. Between these two extremes lie the great mass of commodities the supply of which can be increased through human action. The more readily nature discloses her secrets to man, the less is the difficulty of securing a supply. The greater the stubbornness of nature, the more determined do our efforts become. It is in this sense that value may be considered to be the measure of the difficulty of attainment, — that is, of the cost involved in securing a supply. Value, then, would be the expression of costliness.

What, more precisely, is cost? The word is used in a variety of senses. To the consumer cost means price; if a thing costs a dollar, he means that the price is a dollar. To the employer cost means total cash outlay expended in production. Here the cost usually is less than the price, the difference between cost and price being the profit: a machine may cost the builder ten dollars; he may sell it for twelve. To the workman cost means irksomeness of labor; the harder the work, the more does his labor "cost" him. Underlying all these meanings is the idea of sacrifice, the giving up of something in return for the object to be attained. All sacrifice involves a pain, — a pain of doing something distasteful or of refraining from doing something pleasurable. The one is present physical sacrifice, the other present mental sacrifice depending upon a future physical sacrifice.

Just as the word utility brings to our mind the pleasure we get from a thing, so the term disutility is used to signify its ability to inflict pain. We know that the marginal utility of a commodity diminishes with the increase of the amount at our disposal, and under certain conditions shrinks to zero. We have so much of it that it becomes indifferent to us. It

possesses what Jevons calls "inutility," that is, no (marginal) utility. Its value, as in the ordinary case of air and water, is nothing. Under other conditions of supply a commodity which usually possesses utility may actually inflict a pain.¹ Wood ordinarily satisfies a want; but when the prospective farmer tries to make a clearing, the wood is something to be got rid of. Its presence is a discomfort. It possesses not a positive, but a negative, utility. It has gone through the stages of utility and inutility, and has reached that of disutility. Instead of being a commodity it might now be called a "discommodity." So, in the same way, water in parts of England is something to be removed by draining the fens; water in arid America is so necessary for irrigation purposes that it attains a high value.

Not only things external to a man run through this scale from utility to disutility. Physical activity itself is subject to the same law. When a man begins to work, the exercise of his muscles is a pleasure. A certain amount of it is even a necessity. With the increase in the amount beyond a certain point, the pleasure diminishes, until further activity becomes a matter of indifference. A still further increase means discomfort, until, finally, any more work involves positive agony. Labor or toil, therefore, means painful exertion. But just as the same commodity may, according to circumstances, possess utility or disutility, so the same activity may or may not involve toil. Singing is generally a pleasure; to the chorus girl it is toil. Golf playing is a diversion; to the golf teacher it is labor.

Cost, therefore, is at bottom equivalent to pain. We undergo pain in order to secure utility or to remove disutility. Cost is always the antithesis of remuneration. We give up something in order to get something in return. The ordinary man tries to secure the greatest result with the least effort. He will toil only up to that point where the cost, or pain,

¹ Some commodities which seem to give us pain really afford a surplus of pleasure. A distasteful medicine is none the less prized by us.

begins to exceed the pleasure of what he gets in return. There are grades in disutility or pain, just as there are grades in utility or pleasure. As the marginal utility of a commodity depends on the supply, so the marginal disutility or pain of labor depends on the amount. The more fish I have, the less the utility of each ; the more hours I must work to catch them, the greater the disutility of each hour's work. Up to a certain point the pain of the work does not equal or exceed the pleasure I get from the fish. Beyond that point I shall not work, because the result will be a surplus of pain. At that marginal point the utility of the fish equals the pain or cost of the labor. There will be a balance between the pleasure and the pain ; or, in other words, the pleasure and the pain will be in equilibrium. In the case of the individual economy — that is, of man living apart from society — the marginal degrees of utility and of pain, or cost, therefore tend to be equal. Marginal cost equals marginal utility. The value of the fish may be estimated in either the one or the other.

80. Individual and Social Cost.

In dealing with the problems of actual life, however, we treat not of a Crusoe living on fish, but of men living in society and making exchanges with each other. The individual economy is profoundly modified by the social economy. This is the point that has often been overlooked. Our study is social economics.

We have seen that the marginal utility to an individual is, in effect, a reflex of the social marginal utility. In the same way the marginal "disutility" to an individual may be converted through social causes into a utility. What gives one man pleasure may give another pain. I may enjoy a horse ; but if you do not ride or drive, the horse will put you to the useless expense of keeping him. Yet, since there is a social demand for horses, you can get rid of him to advantage ; and you will therefore not give him away, but keep him until you can sell him with profit. Although the horse had a positive

disutility for you, he now acquires an indirect utility because of social reasons. So if the farmer, mentioned above, who wanted to make a clearing, lived by chance near a large community, he would not burn the wood, but sell it, because it would now have a social utility. Its disutility to him would be converted into a utility. It is only when anything produces a surplus of pain to the community as a whole — as a plague of grasshoppers, or an inundation, or the sewage of a city of which there is no intelligent disposition — that it possesses social disutility. In such a case it can have no indirect utility for the individual.

Since cost is a form of disutility, it follows that the real cost of importance in affecting value is social cost, not individual cost. We stated above that value is the measure of sacrifice. In what sense, however, is value the measure of sacrifice? Evidently, not of individual sacrifice. A street-sweeper may work harder than a skilled factory hand, and yet the value of his services will be less. Value is a social conception; society puts its appraisal upon commodities. If value is a measure of sacrifice and if value is a social estimate, value must be the measure of social sacrifice or cost. Social sacrifice means the sacrifice which members of society as a whole are willing to make. The exertion of one man is estimated in relation to the exertion of another, and the sacrifice of each is compared with the needs of society as a whole. The standard is social, not individual. It is far easier to be a street-sweeper than a skilled factory hand. Society is more willing to spare the former than the latter; for, to replace the one, society must give up more of its energy than to replace the other. Consequently, although the street-sweeper may work the harder, the sacrifice or cost to society is less than in the case of the factory hand. The latter saves society more effort. When one commodity is exchanged for another, or when both cost the same, it means that the additional sacrifice that would be imposed upon society to replace either of them is the same. The marginal social cost is identical.

81. Cost and Surplus.

Since economic activity consists in securing as much enjoyment as possible with the least effort or cost, it follows that under conditions of progress the individual will endeavor to secure a surplus utility. If game is plentiful in one section and so scarce in another that the hunter must work to the point of exhaustion, his needs will be satisfied by far less exertion in the first case than in the second. The extra utility which he enjoys is called residual utility, or surplus utility, or, in short, surplus. Looked at from the point of view of production, it is a producer's surplus: the labor of hunting is the cost of securing or producing the game. From the point of view of consumption, it is a consumer's surplus: the pleasure of eating the game is its utility. The excess of the utility over the cost is the surplus. Whether we call it consumer's surplus or producer's surplus is immaterial.

The conception of surplus, however, is sometimes used in a second way. In the case of the surplus just referred to we compare enjoyment with exertions, and we call it either producer's or consumer's surplus according as we look at it from the point of view of cost or of enjoyment. This conception of surplus is universal: it applies to every man who is at once a producer and a consumer, to the man living in society as well as to the solitary huntsman. The term "surplus" may, however, be used in another sense, which leaves out of account the idea of exertion, and which regards every man only as a consumer. It assumes that there has been no cost of acquiring the articles, or that the subjective cost or toil of acquisition is precisely the same to all. Here the surplus satisfaction that an individual secures is entirely a consumer's surplus,¹ depending on the relative urgency of his different wants. If I agree to give up a book for my neighbor's knife, I do so because I expect his knife to afford me more satisfaction than my

¹ The term "consumer's rent," first suggested by Marshall, is not so good because of the equivocal meaning of "rent."

book. The utility to me of the knife is greater than the pain of parting with the book. As a consumer, I consider the pain of parting with the book as the exact equivalent of the utility I lose; but since the utility to be afforded to me by the knife is greater than the utility I lose through the book, there will be a balance to my credit. As a consumer, I expect a surplus enjoyment.

This specific consumer's surplus, however, is of no practical significance. For in actual life we cannot enjoy anything without procuring it,—that is, without its costing us something. But just as enjoyments or utilities differ from individual to individual, so do costs or sacrifices differ. Both the knives and the books can be obtained only on the condition of some exertion. The cost, or pain, of parting with the book depends on the cost, or pain, of acquiring the knife. Hence the only real surplus which is of importance is the surplus of enjoyment over cost, whether we call it producer's surplus or consumer's surplus. If we take the possession of knives or books for granted, we can indeed speak of consumer's surplus; but if we reflect that knives and books must be procured before they can be parted with, the surplus becomes a real surplus, which can equally well be called a producer's surplus. It is a surplus of utility over cost.

Individual surplus, however, is essentially subjective, and never affects prices. For value is a social conception. This statement is true of surplus in general, as well as of the abstract consumer's surplus just referred to. I secure a surplus utility from my comrade's knife, but he secures a surplus utility from my book. He would otherwise not have given up the knife. The exchange is therefore mutually beneficial. The old belief that what one man (or one country) gains in an exchange another necessarily loses, is incorrect. Each may get a surplus utility. But while there is a surplus utility to each, the value does not necessarily change. The value of the book and the value of the knife remain the same. The marginal utility of one book would still be equal to that of one knife. If for some reason

the book-owners found that knives were twice as useful to them as before, and if for a similar reason the knife-owners thought that books were twice as useful to them as before, the surplus utility of the exchange to each owner would be double what it was before; but the book would still exchange for the knife: their value would be unaltered. Value may thus remain the same, even when the benefits of exchange to both parties grow. The more varied the wants of a community, the greater the benefits of exchange.

On the other hand, values may change and the surplus utility remain the same. If the book-owners prized knives twice as much as before, while the importance of books to knife-owners was unaltered, this very fact would increase the aggregate social demand for knives, and therefore the sacrifice that the book-owners must make to get a knife. The knife-owners would make the book-owners give two books for a knife. The price of books would fall, and that of knives rise. The marginal utility of one knife would equal the marginal utility of two books. The surplus utility to the book-owners would remain the same, because, although the utility would increase, the cost would increase in the same proportion. In every exchange the cost, or sacrifice, depends on the reciprocal demand for the commodities.

The surplus utility that any one individual gets from an economic action, therefore, has no influence on value, however much it may affect his own happiness. It is a result, not a cause. Surplus is the excess of total utility over total cost. Value is an expression of marginal utility or marginal cost. Surplus in the case of any one person is the result of an individual subjective estimate which differs from man to man; value is the result of a social estimate in which the individual preferences lose their significance.

We must therefore be careful to interpret correctly the statement above, that marginal utility equals marginal disutility, or cost. In an isolated economy, where there is only one person battling with nature, this tends to be true of the

individual. In society, on the other hand, whatever the rate of exchange, it is only the social utility and social cost of which the marginal degrees are equal. If a knife exchanges for a book, it is because the demand in the community as a whole is such that the marginal sacrifice to society of parting with a book tends to equal the marginal pleasure of society in getting a knife. To put it more accurately, a knife will exchange for a book only because the sacrifice to society in making the knife, for which it receives in turn the pleasure of books, tends to equal the sacrifice of making the book, for which it receives in return the pleasure of knives. To any individual the sacrifice may be less than the pleasure, but there will always be a marginal individual to whom pleasure and sacrifice are equal. The marginal pleasure in the aggregate tends to equal the marginal pain in the aggregate. The balance or equilibrium is between the pains and the pleasures of the sum of individuals. Where an exchange economy exists, the real equilibrium is a social equilibrium.

This shows clearly that the real cost to any member of society which influences value is not the subjective cost to him. The sacrifice imposed upon society to secure anything is, as we have seen, the exertion needed to replace it. To replace an article, however, from the social point of view, is to produce it. For, although an individual may replace an article by purchasing it from the producer, society as a whole can replace an article only by producing it. Thus, when we speak of social cost, we really mean cost of production; and when we say that value is influenced by cost, we mean that value is influenced by cost of production. What may be to the individual a subjective cost becomes, when translated into terms of society — that is, of value — an objective cost to him. We think no longer of the sacrifice imposed upon any one individual, but only of the social sacrifice, or cost, embodied in the commodity; or, rather, the sacrifice, or cost, to the individual is the result and reflex of the sacrifice to the community. Just as we saw above that the individual utility which

affects value is the reflex of the social utility, so the individual cost which affects value is, as we shall see more fully in a moment, the reflex of the social cost. If an individual desires to sell a commodity, he will normally get for it not what he chooses, but what society as a whole fixes as the proper figure. He may personally be able to raise a particular horse for less than a particular cow; but that will not enable him to sell a cow for more than the usual price of a horse. His own individual estimate is of importance only as affecting the aggregate social estimate. Every individual gauges his economic well-being from the point of view of surplus,—of getting as much satisfaction as possible above the cost; but the cost, or sacrifice, which he must incur is fixed not by himself, but by society as a whole. A farmer will not permanently raise cows if his cost exceeds the social level as reflected in the price.

82. Cost and Utility.

The failure to realize that value is a social conception has led to much pointless controversy. Thus Ricardo and his followers maintain that the value of a commodity is fixed by its cost of production; while Jevons and those that agree with him contend that value is fixed by its marginal utility. Both are right, but neither is right in the sense in which he understood the terms. Cost of production is the measure of value; but it is not, as Ricardo thought, individual cost. Marginal utility determines value; but it is not, as Jevons thought, individual utility. Both cost and utility measure value, because, as we have seen, marginal social cost is always equal to marginal social utility. In the way they frame the statement, the followers of both Ricardo and Jevons are correct in denying the others' statement, and yet err in their own. Rightly interpreted, they are correct in their own statement, and yet err in denying the truth of the others'. Let us make this clear.

Utility, as we know, is the fundamental quality of everything used by man. But utility is not sufficient to give value. For anything to have value its supply must be limited. The utility

which gives it value is the marginal utility. If the supply is unlimited, the marginal utility is zero. Positive marginal utility, therefore, depends upon limitation of supply. But if the supply is limited, it will cost some sacrifice to secure or to reproduce it. Therefore, when we measure the marginal utility of a commodity, we measure the cost of securing it. Hence either utility or cost may be declared the measure of value. Thus, while marginal utility is the fundamental cause of value in the sense that nothing could have any value if it had no utility, cost may be declared to be not indeed the cause, but an equally good measure, of value. Regarded from this point of view, the discussion as to which is the real measure of value is as futile as to ask how to measure the sound or quality of a hammer's blow on a bell. Without that particular kind of bell there would be a different quality of sound ; without that particular kind of hammer there would likewise be a different quality of sound. So in economic life we deal with the demand for anything as compared with its supply. When we speak of utility, we think of the person who wants it,—that is, of the demand. When we speak of cost, we think of the person who parts with it,—that is, of the supply. But these interact mutually ; for the demand, although reflecting the utility, would change if the cost were different ; and the supply, although conditioned by the cost, would change if the utility were altered. To affirm that either utility or cost exclusively measures value is as incomplete as to say that either demand or supply exclusively fixes value. Value is the expression of the relation between demand and supply. We cannot speak of marginal utility without implying cost ; we cannot speak of marginal cost without implying utility.

All this is true, however, as we have seen, only of social cost and of social utility. The utility of anything to an individual figures in the determination of value only to the extent (in most cases infinitesimal) that the individual choice goes to determine or change the choice of the community. If I have a potato field at home, that will not obviate the necessity

of my paying the market price for potatoes. If I am directed by my physician to live on potatoes exclusively, that will not lead the dealer to charge more than the market price. The demand that tells is the aggregate social demand, depending on the social utility.

Conversely, the cost that influences value is not the cost of production of that particular commodity to the individual producer. It may take me two days to make with old tools a table which fully equipped carpenters can turn out in a few hours. I can get for my table no more than the carpenters for theirs. The carpenters can get this price for their table, not because it has cost them so much work, but because they save the members of society as a whole the sacrifice, or cost, of making the table for themselves. If there were no carpenter, society would have to set to work, abandon some of the things it does now, and give up some of its time to make tables. Instead of each member of society devoting a part of his day to making a part of a table, society as a whole sets aside a certain class to make nothing but tables. But what society is willing to pay for the table is always the marginal cost to it, and this marginal cost is the final sacrifice which society is willing to incur for tables as compared with other things. What the carpenter can get for the table will adjust itself to this amount of social sacrifice, and thus the value of a commodity gets to be the equivalent of the (individual) cost of producing it. We may thus roughly say that individual labor or cost of production fixes value; but what it really does is not to fix value, but to express the value that is fixed by social forces as a whole. The value is due not to the labor of the individual who has made it, but to the social service which it is going to render,—that is, to the social sacrifice which it is going to save. If it does not render that service, it will not possess that value, no matter how much individual labor has been spent on it. On the other hand, if less individual labor be spent on it, it will have less value, not because less individual labor has been spent, but because the marginal sacrifice

of society is now less. Utility, and not cost, is the ultimate cause of value.

We see, then, that value may be defined either as the expression of marginal social utility or as the expression of the marginal social sacrifice incurred to secure utility. Value may be estimated in terms of either social utility or social cost, because the marginal degree of the one is equal to that of the other. Individual cost, however, affects value only in the sense that it adjusts itself to the social utility, which is the supreme test. Utility is the positive factor, cost is a result. The exact relation of individual cost of production to value, however, still remains to be studied, and will be discussed later.

83. Social Surplus and Progress.

Since all progress consists in getting more results with less efforts, the problem of social cost and social surplus becomes one of basic importance. All surplus or residual utility is the balance of satisfaction over sacrifice. It may therefore be augmented in two ways: the sacrifice may remain the same, while the satisfaction increases; or the satisfaction may remain the same, while the sacrifice decreases. In the one case we deal with problems of consumption, in the other with problems of production. In the one case we approach the subject from the point of view of utility, in the other from that of cost.

The social surplus may be enlarged by changes in consumption. The sacrifice incurred by the individuals that compose society may remain the same, and yet they may use so much intelligence in the rearrangement of their choices of satisfaction that they may procure a greater net result. It need not cost more effort to cook a good dinner than an unpalatable one, and yet the surplus of satisfaction over sacrifice is greater. When the social choices are improved on a large scale, there will be a great increase in the social surplus.

While it is possible to have in this way a larger satisfaction with the same effort, it happens just as frequently, however, that we can procure the same satisfaction with a smaller effort.

The emphasis is here laid not upon consumption, but upon production. Whatever diminishes the cost of production enlarges to that extent the surplus of society. If the dinner which originally cost one dollar can now be supplied for fifty cents, we shall have to work less to get that dinner; or if we work as hard, we shall have the remaining half-dollar to spend on something new. All civilization depends on the increase of our wants. In most cases, however, the appearance of a new want requires additional effort on the part of individuals for its satisfaction. If the additional sacrifice keeps pace with the additional want, we are no better off than before,—there is no increase of the social surplus. But as soon as we can satisfy the old want with a smaller total effort, the surplus is increased because some of the efforts previously devoted to the satisfaction of the old want are now set free for the attainment of the new object. With the same output of energy we receive greater results. Diminution of social cost is the great creator of social surplus..

While changes in consumption are of significance in themselves, they become of great importance chiefly as engendering changes in production. Whether we call the social surplus, however, a consumer's surplus or a producer's surplus, is, as we know, immaterial. It is equally immaterial whether we say that the progress is due to lower cost or to greater utility. Social surplus is the result of man's struggle with nature. It is the margin between result and effort. The way to increase the surplus is to maximize the results and to minimize the efforts,—that is, to increase utilities and to decrease costs.

The mere increase of the social surplus is, however, not all that is necessary to progress. Without such a surplus, indeed, there can be no highly developed civilization; for where the energy of society is entirely occupied with procuring the bare means of subsistence, there can be no opportunity for the higher life. A frontier community differs from a developed one chiefly in the fact that there is little social surplus available in the former. But the mere production of wealth and

prosperity does not suffice. Unless attention be paid to the problem of distribution as well, the social surplus may remain in the hands of a favored few—the “remnant” of whom Matthew Arnold sings—while the mass of the community may be largely shut out from participation in its benefits. The real democracy of industry, like the true democracy of politics, does not mean that every man is the equal of every one else, but that all should have an equal opportunity to develop what is in them for good. The problem of social progress is to reconcile the greatest possible social production with the best possible social distribution; to create a continually growing social surplus and to provide for its equitable division. Without the latter we are apt to have plutocracy; without the former we can scarcely rise above savagery.

CHAPTER XIV.

THE CAPITALIZATION OF VALUE.

84. References.

J. B. Clark, *Distribution of Wealth* (1899), ch. ix; F. A. Fetter, *Principles* (1904), part 1, div. C; T. Veblen, *Theory of Business Enterprise* (1904), chs. v-vi; M. Pantaleoni, *Pure Economics* (1898), part 3, ch. iii, § 5; E. v. Böhm-Bawerk, *Positive Theory of Capital* (1891), bk. v, chs. i, ii; F. v. Wieser, *Natural Value* (1893), bk. iv, ch. vii; H. Sidgwick, *Principles* (1883), II, ch. vi; J. A. Hobson, *Economics of Distribution* (1900), ch. iv; Irving Fisher, *What is Capital* (Econ. Jour., VI, 1896); C. A. Tuttle, *Real Capital Concept* (Quart. Jour. Econ., XVIII, 1903); W. Z. Ripley, *Capitalization of Public Service Corporations* (*Ibid.*, XV, 1901); F. S. Meade, *Trust Finance* (1903), ch. xvi; R. M. Hurd, *Principles of City Land Values* (1903), ch. ix.

85. Value and Rent.

We have learned that the value of anything is derived ultimately from the satisfactions or uses which it affords, and that the price is the money equivalent of its uses. Some things afford only a single use; the use of an ordinary article of food consists in its consumption. Other things are somewhat more durable; a suit of clothes can be used for a season or two before it is worn out; a machine will last for years; a house for decades. Finally, some things permit of perpetual use. A city lot will serve as a building site as long as the city exists; the privilege granted to a street railway to occupy the public highways remains the same from decade to decade, although the recipient of the privilege may change.

Things can be sold either by parting with their uses one by one or by disposing of all their uses for a lump sum. When I ask, what is the price of a carriage? the owner will answer, ten

dollars a day if he means the price of the use for that period, or a thousand dollars if he refers to its use as long as it lasts. When we part with the use of a thing for a limited period, the payment is called a rent. We may rent a horse for an hour, or a dress-suit for an evening, or a typewriter for a month, or a house for a term of years. Strictly speaking, the word rent regards the transaction from the standpoint of the one who lends the use and secures a periodic return (*redditus*) ; while the word hire designates the transaction from the point of view of the one who enjoys the temporary use. Commonly, however, this distinction is disregarded, and we speak indiscriminately of a man hiring or renting a yacht or a house for his own use. The fundamental conception is the income, in the sense of pleasure or benefit income, to the user. Through the operation of the social forces which bring about exchanges based on money, the income value of anything becomes its money rent, — the amount of money received by the owner or paid by the hirer. The income of anything is the rent paid or received for its use.

Sometimes the word rent is limited to particular kinds of rents. In England, for example, where land formed the chief form of investment even as late as the eighteenth century, rents came to be synonymous with land rents, and when a man spoke of his rent roll, he meant the rentals which he received from his estate. As a consequence, the theory of rent elaborated by the English economists came to have a peculiar meaning. On the other hand, France, in the century before the revolution, had made greater progress in general financial enterprises, and *rentes* came to mean the income of the fund-holder. A *rentier* to-day still denotes one who is living on the income of his capital. As a general economic conception, then, rent is the periodic return (nowadays calculated in money) from the use of a thing for a definite period, whether that thing consists of land, or public funds, or anything else. Rent has a threefold aspect. (1) From the point of view of the economic good, rent is the product: the use that a thing

affords is its product or rent. (2) From the point of view of the owner, rent is the income from the use or product. (3) From the point of view of the hirer, rent is the cost or payment for the use. People pay rents because they receive in return an income in the shape of the use afforded by the thing for which they pay. Rent therefore is at once product, income and cost.

When we part with anything permanently, instead of with some of its uses for a time, we often speak of its selling or market or cash value, as opposed to its rental value. Strictly speaking, this contrast is inaccurate. When we rent anything, we are also dealing with selling value; but what we sell is a single use, or several uses, rather than all its uses. Sometimes again we speak of property value as opposed to rental value. The advantage of this nomenclature is that as long as we control the property we control all possible present and future uses; the disadvantage is that property is a legal conception, while rent is an economic conception. A man also has property in his rents. The real contrast, as was pointed out above (§ 6), is between rental value, in its strict meaning of income value, and capital value. When a man sells one or more uses of a thing, he estimates its capital value. Roughly speaking, he rents in one case and sells in another; strictly speaking, he sells in both cases, but the price represents a limited use in one case and an unlimited use in the other.

The question now arises, what is the relation of rental value to capital value, and how do we come to estimate capital values?

86. The Law of Depreciation.

The durability of economic goods is essentially relative. At the one end, as we have seen, are the merely ephemeral acts or things which are consumed by a single use, like a paper napkin or an apple. At the other end is a building site, which can support a structure to the end of time. Between these extremes lie the great mass of commodities. They all wear out sooner or later, and as they wear out they become incapable

of affording as many or as effective uses. Sometimes the depreciation is rapid, as with a flimsy silk dress; sometimes the commodity lasts longer, as in the case of an ordinary machine; sometimes it is very substantial, as in the case of a modern skyscraper. In every instance, however, if it is intended to be used permanently, repairs are needed. Nothing is indestructible except land, and even that is so, as we shall see later (§ 132), only in the peculiar sense that its extension remains.

It is obvious that the capital value of anything depends in the first instance on the number of rental values, allowance being made for wear and tear. Where the good is ephemeral in the sense that it affords only a single use, the rental value and the capital value coalesce. The rental value is the capital value. We cannot buy the privilege of using the coal or ice even once, without buying the coal or ice itself. The wear and tear here equal the entire value, the single use is the consumption. When, however, we may expect a moderate succession of uses, there is a difference between the rental value and the capital value. Where the depreciation is rapid the difference is not great. A row-boat is quickly worn out, and even a single use may injure it severely. A boat which sells for sixty dollars will often rent for half that amount for a single summer, and the selling or capital value is then only double the rental value. The boat may last for several years, but the older it grows, the greater the need of repairs and the smaller the net uses which it is capable of yielding, until finally the expense of repair exceeds the income, and the boat is thrown aside as worthless, possessing no capital value because it no longer has a single rental value. Where a larger number of uses can be enjoyed with comparatively little depreciation, as in a well-built house, the selling value is frequently ten or twenty times the annual rental value. It may be four or five years before any repairs are needed, but with each ensuing year the decay progresses and the cost of repairs augments, until here also the time arrives when there is no longer any surplus of income over outgo, of enjoyment over exertion. In practical life business men

guard against the results of depreciation by instituting a sinking fund. Instead of spending all the earnings, they set aside an annual sum which will counterbalance the depreciation, so that at the end of a period the accumulated fund will sink or offset the outlay incurred to replace the commodity. The repairs, in other words, may be made from year to year, or may be allowed to accumulate, and made all at once at a subsequent period. Where no repairs are possible, as in a mine, the annual rent must still exceed that of ordinary land which ostensibly yields the same annual returns, because the mine will ultimately be exhausted and a part of the rent must be put to the sinking fund or depreciation account, or goes to satisfy the expectation that the rental value will cease.

The fundamental explanation, therefore, of the relation of capital value to rental value is durability, or the degree of succession of rental values. Capital value depends on net rent, not on gross rent ; that is, it depends on the succession of gross returns, less repairs. Capital value is reached by adding together the gross rentals and deducting the sinking fund. The ratio of capital to rental value depends in the first instance on the number of rental values.

This does not mean that more permanent commodities have a greater capital value than less durable goods. Iron has less value than silk, although it is far more durable. The statement means that when the gross rental of two commodities is the same — that is, when the price paid for the use of each for a definite period is identical — the difference in their capital values is to be explained by the relative number of such uses which each can afford. The rent of a house, as well as that of a horse, may be twenty dollars a month, yet the house will sell for far more than the horse. Neither would have any capital value if it had no rental value. The rental value of both is the same, because the marginal utility of a month's use of each is identical ; that is, the individuals forming that economic group get on the whole as much satisfaction out of a horse as they do out of a house. The capital value of the horse, however,

is less than that of the house, because he will be more quickly worn out, — that is, because he cannot furnish an equally long succession of uses.

Capital is capitalized income. Capital value is a stock or fund of rental values; the larger the number of such rental values which flow in from a commodity, the greater will be its capital value in proportion to its rental value. The relation of capital to rental value depends in first instance upon durability.

87. The Law of Future Estimates.

The uncivilized individual lives only in the present. His wants are spasmodic, and as soon as he has gratified these pressing needs he has no thought for the morrow. With every advance in culture he displays more prudence and foresight. Even some of the more highly developed animals, like ants, bees and squirrels, have an eye to the future, and in the time of plenty lay in a stock for the days to come. The philosophers tell us that the real pleasures of life are those of anticipation and retrospection. But this is true only of the most highly organized natures, and true only in part even of them. To the mass of individuals present needs and present satisfactions are the all-engrossing ones.

The result of this psychological fact is that we lay more stress on present enjoyments than on future enjoyments. To the average man a bird in the hand is worth two in the bush, even though he thinks that he will secure the two. Our estimate of the future is more or less uncertain, because we can never be absolutely sure of anything but the actual. The future may have in store for us either some change in the intensity of our wants or in the capacity of the particular service to satisfy our wants. Present wants and satisfactions are definitely measurable, because the degree of the one and the quantity of the other are fixed. Future wants and satisfactions are less definitely measurable, because of the concurrent or opposite changes that may take place before the future ripens

into the present. Hence the underestimate of the future as compared to the present. That is what we mean when we speak of discounting the future ; we "count off" a part of the enjoyment to come.

The law of lower future estimates is a part of a larger law, with one aspect of which we have already become familiar. All sense impressions may be reduced to those of space and of time. When we deal with space impressions and apply them to economic life, we are in presence of the law of diminishing space utility ; every additional increment in the supply of an actual commodity existing in space has, as we know, (§ 73) a decreasing importance. When we deal with time impressions, we are in presence of the law of diminishing time utility ; every additional postponement in the enjoyment of a commodity causes it to have a decreasing importance for us. Nothing has utility unless it exists in space and time. Increase the space relation, that is, augment the supply, and you decrease the marginal utility ; increase the time relation, that is, postpone the gratification, and you again decrease the marginal utility. In one case we deal with a margin of space ; in the other with a margin of time. The effect is the same. Increase the supply to a certain point, and marginal utility or value will disappear ; augment the postponement of the satisfaction to a certain point, and the marginal utility or value will likewise disappear.

The present estimate of a future satisfaction is therefore ordinarily less than that of a present satisfaction ; the present value of a future enjoyment is less than that of an immediate enjoyment. The present estimate of future uses becomes fainter as the use recedes into the future, until the value of a very distant use vanishes. Therefore, while a commodity with a present rental value may hold out the prospect of many successive rental values, the present worth of each of those future rental values becomes progressively smaller. Since the capital value of anything is the present worth of all the successive future rental values, it is clear that the dispro-

portion between the rental and the capital value will not grow simply with the durability of the commodity ; for the more durable the commodity, the fainter will be the present estimate of the distant use, until finally a further increase in durability will add nothing to the value. A building site may rent for a fixed sum, and may reasonably be expected to yield that rent for an indefinite period. Yet when it is sold it will bring as capital value a sum equivalent only to about twenty or twenty-five times the rental value. There is no depreciation of the land, there is no wear and tear, and no necessity for a sinking fund, and yet the land is worth, as it is called, only twenty years' purchase ; that is, it can be purchased for a sum twenty times the annual rent, even though in all human probability it will go on yielding an annual rent for an indefinite future.

The relation between rental and capital value, therefore, is a resultant of two forces,—the law of depreciation and the law of future estimates. From one point of view, the more durable the commodity and the larger the number of successive uses, the greater will be the disproportion between rental and capital value ; from another point of view, the more durable the commodity and the more remote the succession of future uses, the less will the disproportion be. Both of these statements may be summed up in the assertion that the capital value of anything is the result of adding together the present worth of each of the successive rental values. If the commodity lasts long enough to furnish two equal annual rental values, the capital value will be slightly less than twice the first rental value ; if we may expect three rental values, the capital value will be somewhat less than three times the first rental value. Each increment which goes to form the capital value decreases, until finally there is no further increment at all.

88. The Law of Diminishing Returns.

We have thus far dealt with consumers' goods—that is, articles of immediate consumption—and have seen that their value is derived from the uses or enjoyments which they afford.

Some goods, however, do not afford a direct enjoyment, but are used as instruments to produce things that afford enjoyments. These are hence called indirect, or instrumental, or production goods. It is obvious, however, that just as the capital value of consumption goods is derived from their rental values or uses, so the value of production goods is derived from the value of their products,—the consumption goods. The value of the raw material is due to the value of the finished commodity. The value of pig iron depends upon the value of the nails, billets and other iron products into which it enters. The value of labor depends on the value of what the labor produces. Value starts with direct human satisfactions, and is reflected back and back until it attaches to the original agent, act or thing which is ultimately responsible for the immediate income or inflow of satisfaction.

The fundamental law of value is the law of diminishing utility. The satisfaction derived from successive increments of a consumption good diminishes as the supply increases. When, in the same way, we compare the utility of different increments of production goods or productive agents with one another, we are in the presence of the law of diminishing returns. Instead of the diminishing utility of direct services afforded by something consumed, we think of the diminishing return or service afforded by something in producing the economic good which we consume. If a man tends one loom, he will turn out a certain quantity of cloth. Double the looms and he will do double, or perhaps more than double, the work ; give him four looms and the output will be fourfold. After a certain limit is reached, however, the care of each additional loom will dissipate his energy and cause more mistakes. The total output may be larger, but the output of each loom will be less, until finally new looms will not augment the output at all. If we enlarge the supply of labor instead of tools, the same holds good. More effort means, after a given point, relatively smaller results. A rower may increase his speed by putting forth more exertion, but after a certain point more

efforts do not mean greater speed. An increase of rowers will not change the law. Two men will not row a boat twice as fast as one, four men will not row it twice as fast as two. A large omnibus will hold more people than a small one, but when a certain size has been reached, it will pay better to buy another omnibus than to enlarge the old one. On a piece of land it may be profitable to employ more men as well as to use more manure and better machinery; but after a given point, additional "doses" of labor and capital will begin to give relatively smaller results. The law of diminishing returns is universal. It is another aspect of the law of diminishing utility. The latter springs from the finite nature of man, the former from the finite nature in the elements of his environment. The income or return from a production good or productive agent is like the income or utility of a consumption good. The test of each is its relative contribution to the satisfaction of wants.

Just as the law of decreasing utility results in the conception of marginal utility — the foundation of all value — so the law of diminishing returns results in the conception of marginal utilization. This margin is the point beyond which an additional effort will not give a sufficient return. The margin may be either intensive or extensive. If we crowd more people into the same omnibus, or run more trains over the same track, or make the laborer tend more looms, or put more manure into the same field, we have a more intensive utilization, until finally the intensive margin is reached where the additional returns will not compensate the additional effort or outlay. On the other hand, the crowding of the omnibus may drive passengers to another line, the multiplication of trains may cause accidents, the added looms may mean more breakage, the increase of manure may be unduly costly. In such cases the owner will find it profitable to purchase new vehicles, build a double track, hire more workmen, or secure additional plots of fresher land. This would be an extensive utilization, carried on until the extensive margin is reached,

when it will not pay to add another vehicle, track, laborer or plot. The margin, whether intensive or extensive, is reached through the operation of the law of diminishing returns. Just as the value of every consumption good depends upon its marginal utility, so the value of every production good or productive agent (which is derived from the consumption goods which it produces) depends upon its marginal product, that is, its product at the margin of utilization.

89. Forms of Value.

If we analyze the things that are bought and sold in the market we find that they may be divided into four classes: first, human services, from those of the day laborer to those of the highest professions; second, concrete goods, or commodities, whether production goods or consumption goods; third, relations and privileges of all kinds; fourth, a fund of capital.

(1) In the first class obviously only the single use can be sold. A service is a use, it is not a fund of stored up uses. Here, then, the selling price of the economic good (the service) is the rental price. We speak of hiring a man, just as of hiring a piano. When we hire him for a definite task, we rent his service; if we engage him by the day or month or year, we rent a limited succession of services. The only way in which all the services of the man can be sold at once is when he is a slave, and thus acquires a definite money value as a piece of property. In a state of freedom a man never parts with all his future services for a lump sum. The price paid for human services is not commonly called rent, although we do speak of an Italian *padrone* in America renting out his immigrant compatriots, or of the Southern prison officials renting out their convicts. Ordinarily the income derived from human services is called wages (or, in the case of the professional classes, salaries or fees). Wages, then, are always income; they are never capital, nor can they be capitalized except in the case of slavery. It is only then

that we can properly speak of human capital, or of capital invested in human beings.

The next two categories, which, as we shall see later, differ in important ways, may be classed together in this respect, that they both possess a rental or income value as well as a capital value. A piece of land, a ship and a patent right may either be rented out from year to year or parted with entirely for a lump sum. Their product is always a rent, although the rent may be capitalized.

Finally, as opposed to individual economic goods which have a capital value, there is the general fund of capital. Just as we speak of wealth in general as consisting of pieces of wealth, or of labor in general as composed of the individual laborers, so we speak of capital in general as the assemblage of individual pieces of capital. Capital as a general conception stands in the same relation to the individual pieces of capital as a flock does to the sheep or a forest to the trees ; the sheep and trees are constantly disappearing and being replaced by new accessions ; the flock or forest persists, although the constituent elements are perpetually changing. Capital as a fund of wealth is the embodiment of value or purchasing power, and money is everywhere the measure of general purchasing power. Capital, therefore, as a fund of value can be estimated or transferred in the shape of the money which represents this value. We cannot buy the flock of sheep without buying the individual sheep, but through the interposition of money and credit we can acquire capital in the shape of general purchasing power, and then devote it to any use we desire. We can use it in production and build a factory, or we can use it for consumption and buy a yacht. We can put the fund of capital into concrete goods like machines or land, or into privileges like franchises or patents. When we buy capital in general, therefore, we buy the right of enjoying any future uses that we may elect ; we are not restricted to the particular uses afforded by the individual good in which our capital is temporarily embodied. The use of the sheep is

limited ; the use of the capital invested in the sheep is potentially unlimited, because it can be changed at will to any other form.

When we purchase the temporary use of an individual economic good, therefore, we pay a rent ; but when we purchase the temporary use of a fund of capital in general, the payment is called interest. Interest, hence, is nothing but commuted rent, just as capital is nothing but capitalized income. Instead of hiring a particular piece of capital and paying rent, we hire a fund of capital in general and pay interest. Interest, then, is not paid for money, but for the capital which the money represents. It is really not paid for the capital, but for the uses afforded by the capital when transmuted into the individual things which afford services. Interest of capital is based upon the rents of individual pieces of capital. The single thing yields a rent because it affords a return or product. If we add together all the net rents of existing goods or pieces of capital, we get the entire amount of interest. Total net rent at any given time is equal to total interest. Each consists of the whole of the product or income from all existing wealth which is or can be capitalized,—that is, of the aggregate of the return from all existing pieces of capital. The only difference is that interest is the calculation form of rent. Rent is figured in dollars and cents ; interest as commuted rent is figured as a part of the whole or as a percentage of a principal. The rent of a house is so many dollars a year, the interest of the capital invested in the house is so much per cent a year.

Wages, rent and interest, therefore, are analogous phenomena. They are all prices, even though prices in the language of the street are ordinarily restricted to the selling values of concrete objects. When we contrast wages and prices, we really contrast prices of human services with prices of things ; when we contrast rents and prices, we really contrast rental values of things with capital values of things. Wages are the price of the services of man ; rent is the price of the service.

of particular things and relations, that is, particular pieces of capital; interest is the price of services of the general fund of capital. At the one end is labor, which can never be capitalized; at the other end is the fund of capital, which is always capitalized; in between are the individual economic goods, whose services may or may not be capitalized, and for which people will pay either rents or so-called prices.

90. Value as a Differential.

All value may be considered as a differential. In each variety of goods there will be different grades corresponding to different uses. A good boat will rent for more than a poor one; and if it is "no good" at all, it will not rent for anything. Rent therefore may be measured as a differential from a margin or base line of no-rent, and the rent of anything may equally well be defined to be the differential return or surplus over the no-rent or marginal articles of the class.

It must, however, not be forgotten that almost everything is susceptible either of more than a single kind of use or of different uses to different people. The boat may be useless for sailing, but good for rowing; it may be useless for rowing, but excellent for firewood. A piece of land may be of no use for wheat-raising, but good for alfalfa; it may be useless for alfalfa, but admirably adapted to pasture. The margin or base, therefore, from which rents are calculated may be only a relative and not an absolute no-rent margin. The rent of a particular plot of good wheat land may be calculated as the surplus produce over the worst plot at the margin; but that no-wheat-rent plot may yield a substantial rent as perhaps the best of pasture plots. It is only when a given object is of no use for any purpose that we can speak of an absolute no-rent margin.

Since therefore the uses of things shade into each other, we can take any use as a margin or base from which to measure a higher use. The rent of anything may be regarded as a differential surplus over a lower use, or as a margin from which to

measure a higher use. All value is the expression of marginal utility ; each margin is relative as compared to some other margin. Rent as the quantitative expression of this marginal utility may be estimated either as a whole or as a surplus over something else.

In precisely the same way capitalized rent, or selling value, may be regarded as a surplus. If a fine sail-boat sells for one hundred dollars, we can regard twenty dollars as a surplus value of a fine boat over a poorer one ; another twenty dollars as a surplus of a poor sail-boat over a good row-boat ; and so on until finally the last of the hundred dollars will represent a surplus of the worst boat over a boat which is not even good enough to use as firewood. Again, what is true of rent is true of wages. Rent is the income from things, wages the income from acts ; both are the income from services. The wages of a particular man or class may be regarded as a surplus over the wages of a lower grade class, until finally we get to the individual who receives no wages at all because he is of no use, and who, if he survives, must be supported by the community. The law of wages must be the same as the law of rent, because wages are really rents of a certain kind, rents of acts instead of rents of things. When therefore the traditional discourses of economics speak of the rent principle, or of "quasi-rents," in the sense of temporary instead of permanent or normal surpluses, they are, correct as far as they go, but do not go far enough. What they really mean is the differential principle, which is true of all incomes, whether land rents or other rents, whether rents in general or other selling values, whether the income of things or of services.

When we deal with the fund of value known as capital instead of with individual pieces of capital, we are also in the presence of a differential, but in another sense. Individual commodities differ in grade of utility, and therefore their rents (and capital values) differ. Capital as a fund, on the other hand, is the money value of all existing commodities lumped together. Individual commodities are heterogeneous ; the

fund of capital is homogeneous. There is no general rate of rents ; there is a general rate of interest. Hence interest cannot be a differential in the same sense as rent. Yet the word "interest" itself means difference. *Interesse* in Latin was the sum that lay between (*inter*) the original loan and its return. Although the mediæval writers confused money and capital, thinking that interest was paid for the use of the money itself, they nevertheless justified interest, so far as it was a recompense for the delay in repayment. We who now know that interest is a method of calculating rent realize that it is not simply a question of delaying repayment, but of postponing enjoyment, and that interest may be measured not only positively, but as a differential or surplus of present over future values.

Interest, in other words, is a discount, or difference between the present and future. When a banker discounts a bill, he deducts from the face value a sum equivalent to the interest for the period the bill has to run. Both rent and interest, therefore, as forms of value, express an estimate of marginal uses. Rent regarded as a differential deals with the marginal uses in space ; interest regarded as a differential deals with the marginal uses in time. Rent is the difference in the value of one present enjoyment over another ; interest is the difference in the value of a present over a future enjoyment. How the estimate of this difference, or the rate of interest, is arrived at in actual life is a matter for later consideration (§ 168).

91. Relation of Rental and Capital Values.

Since interest is commuted rent and capital is capitalized rent, it might be assumed that rental values and capital values of the same things would always vary together. If a house rents for the same amount in New York as in Yukon, or if a house to-day rents for as much as it did ten years ago, ought not the capital value to be the same ? In point of fact, however, there is no such exact correspondence between rental and capital values. This is due to several causes.

In the first place, the rate of capitalization is only another way of describing the rate of interest. The rate of interest, however, or the degree of discounting of the future, differs from place to place and from age to age. The rental value, that is, the income, of a given railway bond a few years ago was six dollars a year, and its capital value one hundred dollars. At present, with no changes of importance in the character or earnings of the railroad itself, the same bond, with the same income, is worth half as much again. This increase of fifty per cent in the proportion of capital value to rental value is due to the fall in the general rate of interest on all similar capital from six to three or four per cent. The discount on future enjoyments has appreciably diminished. What is true of the part of a fund of capital represented by bonds, is true of the individual pieces of capital like a house. Two houses that rent for the same amount in New York and Yukon will sell for very different sums, because the rate of interest is low in New York and high in Yukon. The cause of changes in interest will be studied later.

Secondly, since capital value depends on an estimate of the future, it is often much more uncertain than rental value. It is affected by all sorts of hopes and fears. It is subject to the play of speculation. Rental value deals with the present moment or the immediate future; we are reasonably certain, so far as anything mundane is certain, of the exact quantum of enjoyment. Capital value as a summation of more or less distant enjoyments is exposed to all the mutations of human experience. The same rental values may mean now relatively high, and now relatively low, capital values. A comparison in 1901 of 47 industrial corporations with 37 railroads showed earnings of 13.6 per cent on the market value of the industrial stocks, and 4.85 on that of railroad stock. The same income or rental value, in other words, represented a difference of almost 300 per cent in capital value. Rental values, no matter how they fluctuate, are more stable than capital values. That this is true of the

fund of capital is obvious to any one who watches the transactions on the stock exchange. That it is equally true of individual pieces of capital can be seen when we remember that in the *ante-bellum* days of the South, when negroes were simply a part of capital, the rental price of slaves in 1820 and 1860 remained at about the same figure, \$110, while the capital value of slaves increased from a few hundred dollars to \$1500 or \$2000. This growing disproportion between capital and rental value was indeed due in part to the fall in the rate of interest, but in far greater measure to the over-capitalization of slaves resulting from the peculiar economic conditions of the time.

Finally, in the third place, where there are special advantages in the permanent as opposed to the temporary possession of certain things, capital values will be relatively higher than the rental values. In England a country estate is prized for the social and political advantages it brings,—and these advantages accrue not to the annual tenant but to the owner. It is not surprising, therefore, to find that at the end of the eighteenth century land in England was worth from twenty-eight to thirty years' purchase, while funded property was worth only from sixteen to eighteen years' purchase. The disproportion is less to-day, but still appreciable.

Capital value is therefore always based on rental value, but their relation is not constant. It becomes necessary, therefore, to go a step further and to study the causes which fix values in general and which, in explaining relative variations, will throw more light on the relation itself.

CHAPTER XV.

DETERMINATION OF MARKET VALUE.

92. References.

M. Pantaleoni, *Pure Economics* (1898), part 2, chs. i-iii; A. Marshall, *Principles* (1898), bk. v, chs. i-ii; J. S. Nicholson, *Principles* (1901), bk. iii, chs. iii, iv; E. v. Böhm-Bawerk, *Positive Theory* (1891), bk. iv, chs. i-vi; F. v. Wieser, *Natural Value* (1893), bk. ii; A. T. Hadley, *Economics* (1896), ch. iii; H. Sidgwick, *Principles* (1883), bk. ii, ch. ii; A. W. Flux, *Principles* (1904), ch. iii; H. R. Seager, *Introduction* (1904), ch. v; J. E. Cairnes, *Leading Principles* (1874), part 1, chs. ii, iv; J. A. Hobson, *Economics of Distribution* (1900), ch. i, and *Economics of Bargaining* (Econ. Rev., IX, 1899); F. A. Walker, *Political Economy* (1888), part 3, ch. i.

93. Demand and Supply.

All value, as we know, is the reflex of social marginal utility. We have now to study the nature of the social forces which operate to translate into actual prices on the market the feelings of the individuals that comprise the group.

For the purposes of our immediate study it makes no difference whether we are dealing with rental or capital values, or again with values of services or values of things. The general principle of value must be true of all kinds of value. It will suffice in this chapter to take as a type the capital or selling value of ordinary consumption goods, remembering that everything here said is equally applicable to all other forms of value.

It is a truism to affirm that value depends on demand and supply. Strictly speaking, demand denotes desire. Since one's desire for anything diminishes with additional increments, demand is, strictly speaking, the scale of the degree of utility. A given scale affords the law of demand. If one's

desire for anything for some reason increases, so that he is willing to give more for the same amount, we might in this sense speak of a rise in the demand, that is, a change in the scale of demand. On the other hand, if there are several people who prize the commodity differently, a fall in the price would enable more individuals to satisfy their desire, even though the scale of demand of each remained unaltered. There would really be an extension of the consumption, but not of the demand.

Yet in the ordinary language of economic life demand means not simply desire, but effective desire,—a desire which will have some effect in the transactions of the market. Demand has therefore come to mean elliptically the quantity demanded at a given price; and when we speak of a change in the demand, we refer not to any alteration in the subjective scale of desire, but to a change in the amount asked for.

In the same way supply has come to mean the quantity offered at a given price in the market. It no longer denotes the total amount in existence. That part of the total stock which is not offered for sale at a definite price is not an effective supply. The grain or cotton that is allowed to rot in the barn or on the fields has no influence on the price.

94. Market and Normal Price.

By a market was originally meant a place in which individuals met for the exchange of commodities and services. Nowadays a market means a coming together of offers and demands for economic goods, irrespective of the physical presence of the contracting parties. The market may be local, national or international; wherever definite quantities of goods are bought and sold, there is a market, and the price at which the exchange is effected is the market price.

From the nature of the case this price is subject to temporary variations,—the higgling of the market, as Adam Smith called it. The point about which the market price oscillates is called the normal price, and sometimes, although less

happily, the natural price, as being the point to which the price would naturally gravitate if there were no oscillations. Market price is like the surface of the water agitated by the winds,—the waves are now above, now below the surface, yet as long as the winds persist we never see the glassy surface. The alternate activity of buyers and sellers is the wind of commerce, which prevents the normal price from becoming visible.

Normal price itself may be regarded from two points of view. If the conditions of production and consumption are perfectly stationary—that is, if there are no changes in population, amount of capital, methods of production or social demand—we speak of static conditions. Such a state is largely hypothetical, because in all progressive society conditions are continually changing or dynamic. The law is one of movement, not of rest. Yet the study of static conditions is important. Static normal value is like the level of a pond; we can study it only on the assumption that there is no motion of any kind. Dynamic normal value is like the level of an ocean bay, where the tide ebbs and flows and the level is slowly changing; market value is like the surface when agitated by the wind. To ascertain the laws of value we must not only study the forces that produce the higgling of the market,—that is, the winds that disturb the surface; we must also study the forces which change the level of prices,—that is, the strength of the tidal current and the conformation of the shores; we must finally study the causes of the original level itself,—that is, the source of the supply, the volume of the water and the depth of the bed. For instance, wages in America oscillate from season to season, they have changed from century to century, and at all times they have been on a different level from European wages.

We begin, therefore, with the study of market value. We must, however, first understand the conditions that make exchange itself possible.

95. The Conditions of Exchange — The Law of Comparative Utilities and Comparative Costs.

Let us suppose that A possesses salt and B tea, and that each is willing to trade. All that is necessary to an exchange is that A's liking for tea as compared to salt should be different from B's. It is not necessary that A's preference should be the opposite of B's. Both A and B may like tea more than salt, but if A likes a pound of tea four times as much as a pound of salt, and B only twice as much, they will be willing to exchange. If three pounds of salt are given for one of tea, A will be satisfied, for he would have been willing if necessary to give another pound of salt for the tea; and B will be satisfied because instead of the two pounds of salt, which he considers the equivalent of a pound of tea, he gets three pounds. Nor does the fact of an exchange tell us anything about the absolute preferences of the two parties. If A and B are willing to trade tea and salt, pound for pound, it does not follow that A likes tea more than B, or that B likes salt more than A. A may like salt more than B and yet give it up, provided he likes the tea much more than salt, and at the same time likes both tea and salt much more than B. Suppose A gets ten units of satisfaction from a pound of tea and five from a pound of salt, while B gets one unit of satisfaction from a pound of tea and two from a pound of salt. B will then give up the tea because he saves one unit, and A, although he likes salt more than B does, will give it up because he saves five units.

The fact of exchange thus tells us only that A's liking for salt as compared with tea is different from B's; it tells us nothing as to whether A likes salt more than tea, or whether A likes either salt or tea more than B. In technical language, an exchange tells us only that there is a disparity in the marginal utilities of the articles for the two parties, or that there is a difference in the reciprocal demand; it tells us nothing as to the marginal utility of either commodity for either party. The rate of exchange depends on the degree of this disparity, and

the law of exchange may be stated as the law of comparative marginal utilities, or the law of reciprocal demand.

A and B, however, had to secure their salt and tea. It cost them something. A difference in reciprocal demand means a difference in the demand as compared to the supply. This is the same as saying that it is a difference in the supply as compared to the demand. When we speak of supply we think of marginal cost, just as when we speak of demand we think of marginal utility. Exchange may therefore be explained in terms of cost as well as in terms of utility; and the law of exchange may equally well be stated as the law of comparative costs. I may be so much more intelligent than my furnace man that I could save much coal by tending the furnace myself; yet I prefer to look after my business, and let him tend the furnace, because it pays each of us better to do so. The law of comparative costs and of reciprocal demand is the foundation, not only of international trade as the older economists explained, but of all exchanges, that is, of all economic transactions.

96. The Rate of Exchange — Barter.

Having ascertained the fundamental condition of exchange, let us now turn to the rate of exchange. Suppose that A and B both like tea more than salt. A begins by offering ten pounds of salt for one of tea, but really wants it so badly that he would if necessary go as high as sixty for one. B, on the other hand, is willing to give up some tea, but only at the rate of one pound of tea for twenty of salt. At the same time he thinks that A needs tea far more than he (B) cares for the salt, and therefore begins by saying that he will take not less than seventy pounds of salt for one of tea.

It is plain that an exchange can take place only between the limits of twenty and sixty pounds of salt for one of tea. At anything under twenty, B will not exchange; at anything over sixty, A will not exchange. The lower and higher offers originally made by each are excluded by the desire of each

to come to terms. Only between the limits of twenty and sixty will an exchange be profitable to both.

The question still remains: what will be the exact rate between these limits? In pure theory there must be a point between twenty and sixty where the gain of both in surplus enjoyment is at a maximum. The location of that point depends on the comparative desire of each for both commodities. If A prefers tea to salt much more than B does, the exchange will be made at a figure close to sixty; for even though A offers only twenty or thirty for one, his anxiety to get more tea will be greater than B's desire to get the salt at that rate, and will lead him to increase the offer. With every increase in the rate, A's desire for more tea will fall, and B's desire for more salt will rise; but as A's original desire is much greater than B's, the point at which the relative desires become equal must be one comparatively favorable to B, that is, near sixty. If, on the other hand, A prefers tea to salt only slightly more than B does, the rate will be nearer twenty. Whatever the relative preference, there is a point which gives both a total maximum benefit.

This is strictly true, however, only of divisible commodities or articles sold in stocks, where any unit possesses a proportionate value of the whole. Where there is no stock, or where the commodity cannot be divided without some loss of value, such an exact point between the limits may not be found. The relative desires of A and B changed because of the minute alterations in the supply of each commodity. But if the tea and salt were in ten-pound bags, or if A and B were exchanging hens and pigs, the units could not be divided, and it might happen that at least one party would get either a little more or a little less than he anticipated.

Even with divisible commodities, however, the theory assumes that equal knowledge, equal opportunity and equal capacity are found on both sides. When these conditions are lacking, as is usually the case in such an isolated transaction, the actual rate of exchange will depend largely on the superior

shrewdness or good fortune of the one party in gauging the strength of the other. If A can conceal his intentions better, the rate will be favorable to him; if B can "bluff" better, it will be the reverse. The keener and more adroit trader will make the greater gain. In practice, therefore, the rate of exchange will usually be at almost any point between twenty and sixty.

97. One Seller and One Buyer.

Let us now go a step further and suppose that both parties are acquainted with the use of money, and that A has money instead of salt, while B is willing to give up his tea for cash instead of salt. In other words, A wants to buy tea and B to sell it. Instead of barter we now have purchase and sale. Substituting a cent of money for a pound of salt, A offers as before ten cents (instead of ten pounds of salt) for a pound of tea, and B says that he will take not less than seventy cents.

If the desire of A and B for money is as different as was their desire in the preceding case for salt, the problem will be precisely the same. This is sometimes true in actual life. A dollar is worth more to a poor man than to a rich man,—its marginal utility is greater. A physician will charge a wealthy patient for an operation far more than a man in modest circumstances. The price of an old master or a mediæval missal will often depend largely on the wealth of the purchaser. But in the ordinary transactions of life, where we deal in masses of commodities, and where the sum devoted to the purchase is only a fraction of the purchaser's wealth, this difference in the worth of money may be neglected. Prices on the produce exchanges for cotton or wheat are rarely affected by the fact that some of the dealers are richer than others. The great advantage of the use of money is that in ordinary transactions its marginal utility to both parties may be deemed the same.

The problem is therefore simplified. The rate of exchange was so arbitrary, because as A and B got more or less of salt as compared with tea, the marginal utilities of each commodity varied. But now since A and B desire to buy or to sell

tea only, and as we assume that the value of money remains constant, the price that each is willing to pay depends only on their relative demand for tea. In technical language, the rate of exchange is, as before, conditioned by the disparity in the marginal utilities of the two commodities; but since the disparity due to the changes in the utility of money to each is now negligible, the total disparity is less than before. If, as is possible, this relative demand of A and B for salt in the original illustration was responsible for a variation of ten points in each case, the limits within which a pound of tea will now change hands are reduced from the original figures of twenty and sixty (pounds of salt) for one of tea, to thirty and fifty (cents) for one pound of tea. That is, if we neglect the variations due to difference in the marginal utility of money, the price of a pound of tea will be somewhere between thirty and fifty cents. Within these limits it will still be arbitrary, where A and B are the only buyer and seller.

The cases thus far discussed are not typical of ordinary business transactions. People no longer barter with each other, nor does it often happen that there is only a single buyer and a single seller. An example would be the agent of a collector of curios meeting a farmer who is persuaded into selling an old piece of furniture. Ordinarily, however, there will be either a number of buyers or a number of sellers,—and often of both buyers and sellers. In such cases we speak of competition, because sellers and buyers compete with each other to secure the most favorable terms for themselves. When we use the term competition we usually mean mutual competition, *i. e.* competition on both sides. In the case of one seller and several buyers, we speak of monopoly; we neglect the competition because it is only one-sided,—between the buyers. There may also be the reverse kind of one-sided competition, as when several sellers deal with only one buyer. This is sometimes called “buyer’s monopoly,”—an expression which is clear enough, although etymologically not quite exact, as the term monopoly literally implies “one-seller” and not “one-buyer.”

98. One Seller and Several Buyers, or One Buyer and Several Sellers — Monopoly.

Let us now take the case where several A's desire to purchase tea from the monopolist tea-dealer. A, as we have seen, will not give at the outside more than 50 cents; suppose that the limit of A¹ is 48 cents, of A² 45 cents, and of A³ 38 cents. If A³ were the only buyer, the price could not rise above 38 cents, and might be much below it. But now appears A², who is willing to go as high as 45 cents. If each buyer is ready to take B's whole stock, it is plain that competition between A² and A³ will drive the price above 38 cents, whereupon A³ will fall out. The rate of exchange can therefore fluctuate only between 38 cents and 45 cents. If A¹ now steps in and is ready to buy the whole stock, A³ will be shut out and the price will fluctuate between 45 cents and 48 cents. Finally, if A appears, A¹ will be excluded and the price will fluctuate between 48 cents and 50 cents. In other words, when we have competition between the buyers, the rate of exchange is limited above by the highest offer made by the buyer to whom the rate is most unfavorable (the 50-cent rate of A), and below by the highest offer of the buyer next on the scale (the 48-cent rate of A¹). Thus the arbitrariness of the rate of exchange is limited.

There are two methods by which this result can be reached. In an ordinary auction sale, the monopolist seller asks for the lowest offer for the whole supply; but even here there is often an upset price, that is, a price below which the seller will entertain no bids at all. That represents the 30-cent limit of B. With each increase in the bid, some of the would-be buyers fall out, until finally A¹ stops at 48 cents. At an auction A will then get the tea for 48 cents; if it were an open sale on the market, and if B were not willing to sell at that figure, A might go as high as 50 cents. On the other hand, when a municipal government offers to sell bonds, each of the would-be purchasers, all of whom must submit their bids at the same

time in writing, naturally offers the highest price at which he thinks he can distance his competitors and yet make a profit for himself. Here buyers who offer to take the entire issue are often given the preference, and each is driven to his maximum limit, not by the actual rising bids of his predecessors, but by his fear of their competition. This is sometimes called the Dutch-auction system, but it occurs in certain transactions in the United States and other countries as well.

What has been said is equally true, *mutatis mutandis*, of the case of one buyer and several sellers. Suppose that several tea-planters, B's, desired to sell their crop to a wholesale merchant, A, who has in some way monopolized the business of supplying the retail dealers. A, as before, will not pay more than 50 cents, but B⁸ is willing to sell at 38 cents. Now comes B⁹, who says he will accept an offer of 34 cents; B⁸ is evidently shut out and the price will fluctuate between 34 and 38 cents. If B¹ is ready to sell at 31 cents, B⁹ will be shut out and the rate will fluctuate between 34 and 31 cents; if B finally enters the market, B¹ is excluded, and the limits of sale will be between 30 and 31 cents.

Such cases are much rarer than the preceding. For it is more difficult in practice to monopolize the demand for an article than it is to monopolize the supply. Yet instances will readily occur, as where tenders are invited from several persons to supply a definite demand, either of a government office for articles like clothing or armor-plates, or of a private individual for the construction of a house or the making of repairs of any kind. The person inviting the tender is in this transaction a monopolist buyer, and each of the rival bidders now hastens to make his lowest offer at the very beginning in order to forestall his competitor. The contract goes to the lowest bidder for the whole amount.

In what has preceded we have assumed for the sake of simplicity, that each of the buyers is ready to take the whole amount offered, or *vice versa*, that each of the sellers is in a position to offer the whole amount demanded. Oftentimes,

however, this is not true. In the ordinary case of monopoly sales, competing buyers are usually ready to take only a part of the stock. It is instructive to study what the results are under such conditions.

Suppose that the four A's desire different quantities of tea. A, let us say, desires 400 lbs. and is willing to pay up to 50 cents a pound for the first hundred pounds if he cannot get any more, 48 cents for the second hundred, 45 cents for the third and 38 cents for the fourth; A^1 desires 300 lbs. and is ready to pay not more than 48 cents for the first hundred, 45 cents for the second and 38 for the third; A^2 wishes 200 lbs. and will go to 45 cents for the first hundred and 38 cents for the second; finally, A^3 wants 100 lbs. and will give 38 cents a pound. Now, if B has only 100 lbs., i. e. if each of the buyers bids for the whole stock, we have seen that A will force the price up to 48 cents, and may even go up to 50 cents. A will thus secure the entire supply. If, however, B has more than 100 lbs. to sell, some of the buyers (A^3) will not bid for the total amount. As a consequence both the price and the quantities which each purchaser secures will vary. Suppose that B has 300 lbs. A and A^1 between them will bid the price up to 45 cents in order to exclude A^3 , and the price will vary from 45 cents to 48 cents. At any such price A will not get more than 200 lbs., for although he is willing to pay up to 48 cents for his second hundred, he finds that A is ready to pay just as much for what is his first hundred; and while A is willing to give up to 45 cents for his third hundred, A^1 is ready to pay as much for his second hundred. A cannot escape the competition of A^1 except as to 100 lbs. The result is that the price for the whole 300 lbs. must be the same to both, that is, at some point between 45 cents and 48 cents, and that A will get 200 lbs. and A^1 100 lbs. at that price.

If B has 600 lbs., it can be shown by the same reasoning that the price must be between 38 cents and 45 cents, and that A will get 300, A^1 , 200, and A^2 , 100 lbs. The price cannot fall below 38 cents, for otherwise A^3 would get some tea,

— a condition which all the others are interested in preventing, as they know that there is not enough to go around. But although A³ is shut out, A² cannot get more than 100 lbs., because if there were any danger of his doing so, A¹ and A would fear to lose some of their share and bid the price up above 45 cents, which A² cannot afford. For the same reason A¹ cannot get more than 200 lbs., for A would then bid the price above 45 cents, which A¹ cannot afford for his second hundred ; and, finally, A cannot get more than 300 lbs., for he would have to exclude A¹ by offering more than 45 cents, which A cannot afford for his third hundred.

Thus in all such cases the rate of exchange will vary between 38 cents and 50 cents, according to the relative demand of each of the buyers. By the same reasoning it might be shown that where we have one buyer and several sellers the rate would vary from 30 cents to 38 cents. In each case of such one-sided competition the arbitrariness of the rate will be less than where there is no competition at all.

99. **Several Sellers and Several Buyers — Competition.**

We now come to the final case, so generally found in actual life, where there are at the same time several buyers and several sellers, that is, where there is competition on both sides. They all meet, either in person or through agents, on the tea exchange. Each buyer desires to purchase a certain quantity of tea, but all the buyers together are ready to take more than is offered, provided they can get a satisfactory price ; each seller wishes to dispose of a certain quantity, but all the sellers together would be ready to sell more than there is a demand for, provided they can get a satisfactory price. In other words, each desires to do as much business as he possibly can with profit. Under such conditions the market price of the tea must be 38 cents, not more and not less. There will be no variation at all.

For if the price fell to 37 cents some of the sellers (represented by B³) could not afford to sell, and with the shortage

in the supply all the buyers together could not get as much as they want ; they would therefore bid against each other, in the fear of not getting enough, and the price would rise. It could, however, not go above 38 cents, for if it were driven say to 39 cents, some of the buyers (those represented by A's) could not afford to buy. With the falling off in the demand, each of the sellers would fear to be the unlucky one who failed to dispose of his stock ; the sellers (B's) would therefore vie with each other in reducing the price until it fell to 38 cents.

Thus we see that while in the case of one buyer and one seller the rate of exchange is arbitrary (between 30 cents and 50 cents), in the case of competition on either side the limits of variation are reduced (between 30 cents and 38 cents, or 38 cents and 50 cents respectively), and in the case of competition on both sides, the limits meet, that is, the arbitrariness disappears and the rate of exchange is fixed (at 38 cents).

100. Conclusions.

From the above analysis follow certain important conclusions :

(1) Under free competition there can be at a given time and place only a single price for the same commodity. The price of tea must be 38 cents to all ; if it were less or more, the pressure of the competing buyers or sellers would at once operate to bring it back to that point. The exceptions to the rule are only seeming. It may happen, for example, that on an exciting day on the stock exchange, when there are violent fluctuations in the market, the same securities may be sold at the same time in two different groups at different prices. Here, however, there is no perfect competition ; there are really two separate markets, the members of which have no direct connection with each other. As soon as the excitement dies away and the groups of buyers and sellers coalesce, the market becomes a unit, competition is again perfect and the price is the same throughout. In the same way a firm may do both a retail and a wholesale business, and sell the same article for different

prices ; but plainly there are two separate markets. Again, some purchasers have to pay more because their credit is not good ; but there is no perfect competition, because the buyers are really offering different things in exchange. Finally, some sellers may ask less because they are ignorant of the market conditions, or may grant lower rates to large purchasers because the transactions are secret. In no instance where there is a perfect competition can there be more than one price for the same thing at the same time.

When competition is absent on one side, that is, in the case of monopoly, this principle does not apply. Since the object of the monopolist is to make the greatest possible net profits, it is to his interest to sell each increment of his supply at the highest possible price. If we refer to the example above (p. 232), it will always be to the interest of the monopolist tea-dealer who has a stock of 300 lbs. to sell 100 lbs. to A at a price over 48 cents, and the other 200 lbs. to A and A¹ at a price between 45 cents and 48 cents, rather than to sell the 300 lbs. at the lower price. The monopolist will not generally be able to do this, for he may be selling in a market where he must seek to dispose of his whole stock without perfect knowledge as to the conditions of the consumers. Wherever he can, however, he will make different prices to different persons, and if possible will even sell different increments of the supply at different prices to the same person. Thus not only does the Standard Oil Company find it profitable to charge different prices for its oil, but the makers of particular brands of soap or chocolate, which give them to that extent a monopoly, are in the habit of putting the same soap or chocolate into different packages and selling them at different prices, in the expectation that different grades of purchasers will be attracted. Under competition this would be impossible.

(2) In the case of competition the market price is always the one at which the greatest number of exchanges can be effected. If the price fell below 38 cents, some of the sellers could not dispose of their tea ; if the price rose above 38 cents,

some of the buyers would be unable to secure tea. In either case some would go unsatisfied. When the determination of the market price is left to a superior authority, as on the Berlin stock exchange, we have a good illustration of the principle. There the bids and offers, in writing, are so adjusted by a committee that although no one pays more or receives less than he intended, some may pay less or receive a higher price for such quantities as are needed to balance the transaction, with the result that some bids or offers which would otherwise have been excluded are finally accepted.

In the case of monopoly the principle does not apply. Since the monopolist controls the supply, he may secure a greater net return by selling a smaller quantity at higher prices rather than a larger quantity at lower prices. The exact point at which he can sell the largest quantity at the greatest profit depends on the rapidity with which the scale of demand increases as the supply falls off. If the monopolist is in possession of 600 lbs. of tea, the entire stock in the market, whether he sells 600 lbs. for 50 cents or 500 lbs. for 60 cents, will be immaterial to him. But if he finds that by his offering only 500 lbs. the price will rise to 65 cents, he will naturally offer only this quantity, and destroy the other 100 lbs. In the case of competition he would not dare to do this, because his competitors would continue to supply the market at approximately the old price; and he would be compelled to accept this price for his reduced quantity. Had the Dutch East India Company not possessed a monopoly, it would not have destroyed a part of its stock of spices in order to secure greater profits from the sale of what remained. When some of the misguided Alabama planters burned a part of the cotton crop in 1904 in order to raise the price of the remainder, it was on the assumption that every other planter would burn his proportionate share,—an assumption as rash as it proved to be unfounded.

(3) If by demand price we denote the price offered by the buyers, and by supply price the price asked by the sellers, the

marginal demand price is the lowest, as the marginal supply price is the highest, price that is actually accepted. The market price must always be the price where the marginal demand and marginal supply prices meet. The market price is therefore in cases of competition always the marginal price. In the example given above the marginal purchaser is A⁸; the marginal seller is B⁸. A⁸'s marginal offer to purchase, *i. e.* his demand price, is 38 cents; B⁸'s marginal offer to sell, *i. e.* his supply price, is 38 cents. If A⁸ was originally willing to go as high as 39 cents, while B⁸ was ready to sell at 38 cents, these would not be final marginal figures; for either there would be an A⁴ not willing to go quite so high and a B⁴ demanding a little higher price; or A⁸ would not give as much as 39 cents for a further increment, and B⁸ would not be willing to let a further increment go for as little as 38 cents. There would inevitably be some point between 38 cents and 39 cents where the mutual competition of the A's and B's would meet, and which would mark the marginal offers of A⁸ and B⁸ respectively.

The difference between the actual market price and the non-marginal offers represents the surplus. In the case of the sellers who get the money, the surplus is called a profit; in the case of the buyers who get the tea, the surplus is a consumer's surplus if they drink the tea, or a profit if they sell the tea. B⁸, who sells the tea for 38 cents, makes no profit. His offer to sell for 38 cents is the marginal offer, because at that point he ceases to have any inducement to exchange. But B² would have been willing to take 34 cents, and therefore makes 4 cents a pound profit; B¹, whose limit was 31 cents, gains 7 cents; and B with a limit of 30 cents gains 8 cents. On the other hand, A, who buys the tea for 38 cents, would have been willing to go to 50 cents. If he drinks the tea, this difference of 12 cents represents a surplus satisfaction to him; if he was willing to give 50 cents because he knew he could sell it for that, the 12 cents represent his profit. A¹, whose limit was 48 cents, secures 10 cents surplus, A² with a limit of 45 cents gets 7

cents surplus, while A*, whose limit, 38 cents, is equal to the price, enjoys no surplus at all.

The marginal buyers and sellers (those who fix the price) thus neither make nor lose ; there will be nobody beyond the margin because he would lose ; while all those within the margin — the intramarginal buyers and sellers — make a gain, measured either in money or in enjoyment. The gain — whether profit or consumer's surplus — has, however, no effect on the price.

In the case of monopoly there is generally no marginal price, because there is only one seller or one buyer respectively. In the ordinary case of one seller there are indeed many buyers, one of whom makes a marginal offer or demand price, while the intramarginal buyers gain. But as the seller has control of the supply, there is only one supply price, — no higher or lower supply prices, and therefore no marginal supply price. It is barely conceivable that the relative state of demand and supply is such that the seller is compelled, in order to dispose of anything at all, to reduce his price to a figure so low that even the least anxious purchaser can get what he wants at his own valuation. In such a case the monopolist makes no gain ; his supply price would be the marginal demand price. But, except in this almost impossible case, the monopolist will be able to charge more, and the market price will not be the marginal price. Market price is always the price at which the demand price and the supply price meet each other ; in all but the most exceptional cases monopoly market price is not a marginal price.

CHAPTER XVI.

DETERMINATION OF NORMAL VALUE.

101. References.

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102. Normal Demand — Elasticity of Demand.

In the discussion of market value we studied the process by which the temporary demand and supply balance each other. In the discussion of normal value we must consider the influences which affect the more permanent demand and supply. In our example it was assumed that the temporary demand and supply were such that tea sold for 38 cents. The question now arises, why did tea sell for 38 cents rather than for 3 cents? The study of normal value is the study of normal demand and of normal supply.

Since the demand for a commodity means the quantity desired at a given price, a change in the demand may take place without being caused by any change in the price. When

ostrich feathers went out of fashion a few years ago, the demand fell off to such an extent that prices went down and production was curtailed. The supply adjusted itself to the smaller demand at the lower price. The change in demand was, in last analysis, the cause of the change in price.

Ordinarily, however, demand is affected by the price. We speak of demand being elastic when a change of price produces a marked alteration of demand, demand falling or rising as the price goes up or down. Every commodity has its own law of demand. There are as many degrees of elasticity of demand as there are variations in human wants and the ability of men to satisfy these wants. Demand may be relatively inelastic or stiff, either in the sense of being constant or in the sense that it will be completely destroyed by any increase of price.

(1) The best example of inelastic demand in the first sense is salt. A fall in price will not induce us to eat more ; an increase of price will result in almost no falling off in demand. Nevertheless the demand is not completely inelastic, because if the price rises enough the poor may be compelled to curtail its use, even if it involves disease and decimation. Somewhat analogous in this respect to necessities are high-priced luxuries. The purchasers of pearls are not quite so likely to be held back by a moderate increase of price as would be the less well-to-do consumers of cheaper commodities. Yet the demand for pearls is relatively inelastic only at one end of the scale ; even a slight decrease of price might augment the demand considerably.

(2) The other case of inelastic demand may be illustrated by oleomargarine. If the price were to rise beyond a certain point, the demand would be completely destroyed, and it would be replaced by butter. Even here, however, the demand is inelastic only beyond that limit ; within it, a decrease of price means an increase of demand. With well-nigh every commodity the demand will be annihilated if the price is forced high enough.

The proper statement, then, is not that demand is quite inelastic, but that every commodity has its own relative degree of elasticity of demand. The demand for some things is far more expansible than for others; a fall in the price of cotton will mean a greater increase in demand than a proportionate fall in the price of books.

While utility lies at the foundation of value, some commodities can be utilized only in combination with others. A bow is of no use without an arrow; a pen is worthless without ink. The demand for such complementary goods is a composite or joint demand: we want the pen and the ink together, we want neither of them separately; but when we know that we can get the one, we want the other. The demand for either of two complementary goods is thus an indirect or derived demand, and the elasticity of a derived demand often differs from that of a direct demand.

If the price of both complementary goods rises, the demand for each will normally fall. But if the price of only one of the complementary goods rises, the demand for it will not fall to the same extent. If both ink and pens rise in price, more people will use pencils. But if the price of ink remains the same, the price of pens must rise far higher before the purchaser will be driven to accept a substitute. The demand for one of two complementary goods is more inelastic than the demand for a commodity which possesses independent utility. Direct demand is more elastic than the derived demand which flows from the existence of joint demand.

In modern life the sphere of joint demand is continually growing. Production is becoming more complex, and the demand for most goods used in production depends more and more on the possibility of combining them with others. Consider the numberless things that go to make up a steamship. Some of them possess a direct utility for other purposes; but to the extent that their value largely depends on the demand of shipbuilders, most of them may be considered complementary goods. The more complex our productive processes and

the more refined our methods of consumption, the greater is the sphere of joint demand, and the more striking are the effects which changes in demand for one commodity produce on the demand for others. The demand for bicycles affected the demand for horses; the introduction of the railway revolutionized the demand for coaches and for country inns. The demand for any commodity is in one sense dependent upon, or derived from, the demand for other commodities.

Whatever the nature of the demand, however, whether direct or complementary, whether stiff or inelastic, as long as there is any permanent demand at all, there will be an effort on the part of society to fill the demand. Inasmuch as all value depends on the relations between demand and supply, it becomes necessary to study the forces which influence the permanent supply.

103. Normal Supply — Cost of Production.

We have learned above (§ 89) that valuable things may be divided into four classes, namely, human services, concrete commodities, relations and privileges, and a fund of capital in general. It must be noted, furthermore, that economic goods are also divisible into goods of which the supply cannot be increased, like favored sites of land, waterfalls, old pictures and coins, or unique examples of anything; and, secondly, into reproducible goods.

The discussion of market value and the preceding remarks on normal demand apply to all the above classes. In treating of normal supply, however, it is advisable to study first those concrete things which can be duplicated. The great mass of commodities can be increased in quantity, and the progress of society depends ultimately on this increase. We shall therefore restrict the discussion in this chapter to those reproducible commodities, and reserve for the next chapter the study not only of those concrete goods whose quantity is fixed, but also of the other embodiments of value.

Sometimes a commodity is picked up by chance, as when

we stumble across a gem or an unexpected deposit of gold. Clearly, however, we cannot depend on such accidental finds for a permanent supply; as soon as we search for them we are purposely spending time and labor on their acquisition. Since therefore all goods whose quantity is susceptible of increase are acquired (or, in technical language, produced) by efforts, they cost something to produce. In a society which uses money this subjective pain cost is translated into a money cost, or what is ordinarily called the expenses of production. Hence it is usually stated that the normal supply price of commodities — that is, the price at which producers in the long run are willing to sell their supply — depends on cost of production.

In making this statement, however, we must be careful to define both branches of the term cost of production. By production we do not mean particular production; by cost we do not mean individual cost.

(1) Cost of production does not necessarily mean the cost of producing the particular commodity in question. The labor expended on a commodity has no necessary influence on its price. A yard of cotton cloth may have cost twenty cents to produce; if through some new invention the same cloth can now be produced for ten cents, the price of the old supply will no longer be twenty cents. It is evident, then, that when we speak of cost of production we mean the cost of continuous production or cost of reproduction. If cotton cloth can be duplicated or continuously produced (*i. e.* reproduced) for ten cents a yard, the supply price will remain ten cents. It is only where the cost is a constant cost, that is, where cost of production is equivalent to cost of continuous production or reproduction, that the supply price depends on the cost of production. When cost of production and cost of reproduction diverge, it is only the latter that affects value.

(2) Secondly, cost of production does not mean individual cost. Value, as we know, is a social conception; the real cost of production which affects value is the socially necessary cost.

The important point is not that a commodity costs the producer something, but that it saves the consumer something. It may save one consumer more than another, but its value depends on what it saves the social group as a whole. This saving of social cost is what is meant by socially necessary cost. I may spend much time on something which will have no sale because it does not suit the social demand. The commodity will then of course not be duplicated; there will be no cost of reproduction. The markets are full of such examples of misdirected labor, which involve the producer in loss. A new shirting, for instance, fails to strike the popular fancy; a new brand of tobacco attracts no notice. If, on the other hand, the product fills a social demand, the producers will adjust their output and their exertions to this demand. The cost to the individual producer will adjust itself to the socially necessary cost, that is, the amount which the purchasers as a group are willing to give rather than make the article themselves. If the individuals cannot reduce their cost, they will stop producing; if they reduce their cost below this point, the point itself will move. Society will not be willing to give more, because what the producers can do, the rest of society can, if necessary, do. It is in this way that an equivalence is brought about between individual and social cost; and it is only because of this equivalence that cost of production may be said to influence value.

When therefore we affirm that the normal supply price depends on cost of production, we must remember that we are speaking only of reproducible goods, and that the statement is true only in the sense, first, that production means reproduction, and, secondly, that cost means socially necessary cost,—not pains (or their money equivalent) taken, but pains saved. When individual and social cost diverge, value does not depend on individual cost of production; when they meet, value may be expressed in terms of either. It is only because individual cost tends to adjust itself to the socially necessary cost that we can roughly speak of the price of anything depending on its cost of production.

104. Law of Marginal or Maximum Cost.

The term cost of production must be further defined. Whenever there is more than one producer, there will be different costs of production. Producers differ in ability or in opportunity. While all similar units in the supply sell under competitive conditions at the same price, the superior skill of some employers or the more fortuitous combination of other causes enables some to produce more cheaply than others. If the cheaper producer could supply the whole market, he would secure a monopoly. But while all producers seek to sell as much as they can, it only rarely happens that any one can furnish the entire supply. Whenever there is competition, there are different costs of production.

It may conceivably happen, indeed, that all the producers at a particular moment are men of precisely the same abilities and subject to the same conditions. In this possible case — which is apt to be true only of newly started industries — there would indeed be only one identical cost for all units of the supply. There could then, however, not be any permanent profits to all the producers, because prices could not permanently remain above the mere cost of production. If there were profits to all the producers, competition would surely induce one of them to lower the price in the hope of securing larger profits through greater sales ; or if he did not do this, some new producer would enter the field and cut prices. The only way in which prices could be permanently kept at the old level would be through some control of the supply. We should, however, then no longer have free competition, but should be in the presence of some form of monopoly. Permanent production at the same cost for all units of the supply almost always involves some form of monopoly.

Since, therefore, there is in case of competition no uniform cost, the question arises, when we speak of prices depending on cost of production, which cost? It can manifestly not be the lowest cost. If at any moment there are five firms supplying

the entire market for cotton goods, at a cost to each of six, seven, eight, nine and ten cents a yard respectively, it is clear that the price will not be six cents, for all except the six-cent producer would then lose money and stop. Nor can the price be fixed by the average cost of production, as is often carelessly stated. For if the price were the average cost, that is, eight cents, the nine and ten cent producers would lose and withdraw their capital. As long as the demand is large enough to keep all the producers in business, the price must be ten cents,—corresponding to the greatest or maximum cost. It cannot be lower than ten cents, for otherwise the ten-cent producer would step out; it cannot be higher than ten cents, because in their mutual endeavor to capture more of the market the price will be kept down to the lowest point consistent with continuous production.

This maximum cost may also be called the marginal cost of production, because the ten-cent producer is just on the margin of withdrawing. He neither makes nor loses. All the other producers—the intramarginal producers—earn a profit represented by the difference between the cost to them and the selling price. The six-cent producer makes four cents on each yard, the seven-cent producer three cents, and so on. But the ten-cent producer only covers expenses.

If we could conceive of society in a state of rest, with no changes in population or fashion or supply of capital or technique, this condition would be permanent. The marginal producer would just barely make both ends meet, but would earn nothing above his cost. But although society is never permanently in such a state, the condition may at any given period be said to be realized. At every season when goods are thrown on the market the seasonal supply may be deemed fixed. The cotton prints that are sold this year were made months ago. According to variations of demand from day to day the market price will change, but the oscillations during this particular season will move about a central point of normal price which, so far as the supply for that season is concerned,

depends upon the maximum cost, that is, the cost of producing the most expensive increment in the actual supply. Whatever the daily fluctuations of market price may be, the normal price for that season will be ten cents a yard. At any given period, cost of production means maximum or most expensive cost.

105. Law of Minimum Cost.

The normal supply price just discussed is, however, not the permanent price for longer periods. Actual business conditions are dynamic. There is a continual movement going on in the forces that affect supply. The cotton prints may sell one season at ten cents, but next season the more efficient producer, or perhaps some new-comer with more capital or with better machines or with the chance of securing cheaper labor or with improved facilities for marketing the product, will endeavor to put out an increased supply at a lower cost. This increase of supply will tend to depress the price, and although the manufacturer's percentage of profit may be smaller than it would have been at the old price, his aggregate profits will be enhanced through the great volume of sales.

On the other hand, his gains will be at the expense of the less efficient producer at the margin. In every business there are always some who are able just to make both ends meet. Their machinery is antiquated, their capital has been depleted, their business activity and knowledge are no longer what they should be, and their former profits, if there ever were any, have now vanished. They may continue for a time to struggle along, hoping against hope, and may live on their capital, being content to bridge over the next few years without profit; or if they have invested heavily in unsalable buildings and machinery, they may deceive themselves by a fallacious system of bookkeeping, and through a neglect to charge up the item of depreciation of stock or machinery, may figure out a nominal profit. In any case, however, the day of reckoning is sure to come. Sooner or later the producer will find that he is not making money. He will cease producing that particular

commodity, and his place will be taken by some more efficient producer.

All industrial progress consists of a perpetual change at the top and at the bottom of the line of producers. Fresh capital is continually coming in, the discouraged are continually stepping out.

It is plain, then, that if by normal value we mean the value to which prices tend in the long run to conform, normal value under conditions of progress moves in the direction of cost of production under the most favorable, not under the least favorable, conditions. It tends toward lowest cost, not highest cost. In the cotton industry, for instance, a new man enters the field who can produce prints somewhat more cheaply. While not able to supply the entire market, he can turn out such large quantities that the price will fall, let us say, to nine cents. He is willing to sell at that figure, because he expects to dispose not only of his share of the greater sales due to lower prices, but also of a proportion of the goods previously sold by the ten-cent producer, who now drops out. Even if he could supply the whole demand, he will not reduce the price to eight cents, because, although this would again increase his sales, his competitors — the six and seven cent producers — will also sell more, and he will not be able to sell enough more to compensate him for the lower price. Under such conditions the price will be nine cents, and, the ten-cent producer having fallen out, the nine-cent producer becomes the marginal man.

On the other hand, if the new producer finds that he can produce his goods at a lower price and market them more successfully than his competitors, the price will gradually fall. With every decrease in price the old marginal producer disappears, and he who formerly made a profit now becomes the marginal producer. When a five-cent or a four-cent producer makes his appearance, the price may fall to six cents, and the nine-cent, eight-cent and seven-cent producers successively abandon the struggle, until the six-cent producer now becomes the marginal producer.

Thus it is that while the cost of production on which seasonal or short-time normal supply price depends is greatest or maximum cost, the cost of production which influences permanent normal value is lowest or minimum cost. In conditions of change the marginal or maximum cost does not fix the price, but is fixed by the price ; the price does not fall to nine cents because the nine-cent man becomes the marginal producer, but the nine-cent man becomes the marginal producer because the price falls to nine cents. Hence, while normal value is at any given moment at the point of maximum cost, it is under conditions of progress continually moving in the direction of minimum cost.

106. Elasticity of Supply — The Law of Varying Cost.

Corresponding to the elasticity of demand, there is an elasticity of supply. In some cases where no additional quantity can be secured on any terms the supply may be said to be completely inelastic. But in most cases the supply is susceptible of increase. According to the difficulties involved in procuring this new supply we speak of the relative elasticity of the supply. When an additional amount of exertion will result in a proportionate increase of output, that is, when double the labor will double the supply, we speak of the cost being constant.

Constant cost, then, is not the same as uniform cost. When we say that a commodity is produced at uniform cost, we mean that all parts of the supply produced at a given time cost the same. This implies that there is only one producer. For, as we have seen, as soon as there are different producers we have a maximum and a minimum cost. Uniform cost implies monopoly. On the other hand, when we say that a commodity is produced at constant cost, we mean that additional quantities will cost the same. This applies to competition and to monopoly alike. If it costs the monopolist ten cents to produce every yard of cotton, no matter how large the output, the cost is both uniform and constant. If the ten-cent producer

competes with the six and eight cent producers, and if each can double his output by the application of double the amount of capital, the cost is not uniform, but it is constant.

In many cases the cost of production is not constant, because the supply is less expansible or elastic. When each additional increment of the supply costs more than the preceding, we speak of increasing cost or, since the returns from each additional application of energy grow smaller, we can equally well speak of diminishing returns.

In one sense everything, as we know (§ 88), is subject to the law of diminishing returns. While, however, the law of diminishing returns or increasing cost is universal in the sense that it applies to all economic goods after a certain point, it does not necessarily apply before that point has been reached. The "certain point" is the point of full utilization. It frequently happens that this point has not been reached. If we recur to the examples on page 213, the omnibus may run only half full; there may be only two trains a day when there might equally well be a dozen; a farmer with a twenty-five-acre tract may have a family so large that he would more than double his produce if he had a fifty-acre farm. In the case of the omnibus an increase of business will not increase the expense at all; in the case of the railroad more rolling stock and employees may be needed, but new bridges, new roadbed, new stations and new general offices may not be required; in the case of the farmer more seed and perhaps more implements will be used, but these may constitute only a minor element of cost. In all these cases a doubling of receipts may not be attended by a doubling of expense; the expenses will increase, but not so fast as the income.

Whenever the supply is more elastic, that is, whenever double the amount of exertion yields more than double the output, we are in the presence of the law of increasing returns or decreasing cost. When double the exertion just doubles the output, we have the law of constant returns or constant cost. Up to the point of full utilization the returns may at first grow

faster than the cost or exertion, and may then keep pace with it. In every business enterprise some expenses grow with every increase of business, but others remain the same up to a given point. Such expenses are called constant as opposed to variable expenses. Wherever the investment of capital is considerable, the proportion of constant to variable expenses is apt for a time to be large. But the time will ultimately expire. When the railroad traffic becomes very dense, new tracks, heavier bridges, larger stations must be provided, and the law of increasing returns loses its efficacy. Sooner or later the law of increasing returns will be supplanted by that of constant returns, only itself finally to give way to the fundamental law of diminishing returns.

At any given period, however, an industry may be subject to any one of the three laws. The question whether a business follows the law of diminishing, constant or increasing cost is a question of fact depending upon the possibility of profitably employing more labor or capital, that is, of successfully extending the point of intensive or extensive utilization.

107. Law of Joint Cost.

Just as we have seen that there is a joint demand, so there is a joint supply. To the extent that supply depends on cost, we have the law of joint cost. In many cases different parts of the same commodity serve different uses and therefore sell at different prices: the staterooms in a steamer, the seats in a theatre, the various portions of an animal used for food, appeal to different classes, and thus sell at varying prices. The normal price does not adjust itself to the cost of the particular part, because there is no such separate cost. It is the whole, not the parts, to which we can assign a cost; and this cost is the joint cost. The normal price of all the parts together adjusts itself to the joint cost, but the price of any particular part may be above or below this level.

A more important class of cases is represented by industries devoted primarily to the production of some one commodity,

but which have as an incidental result the creation of a by-product. Sometimes this by-product is only the refuse, as in the case of the mash sold by the whisky distillers or the coke sold by the gas companies. Occasionally the by-product even develops into the chief product. The refuse of to-day becomes the chief source of profit of to-morrow. There is nothing more fascinating in the annals of science or more important in the progress of wealth than the story of the modern utilization of wastes and by-products. This story, in its application to the United States during the decade 1890-1900, has been told by Mr. Kittredge in the twelfth census.

Whenever a business produces more than one kind of commodity, we have something analogous to by-products. One of the greatest difficulties in modern enterprise is for the producer to assign to each unit or class of his output its proportionate share in the joint cost. In the case of railway charges this difficulty is at its maximum. In such cases the price of individual product may bear little relation to its own cost, although the price of all the products together is fixed by joint cost. The railway charges more for the transport of a given value of silk than for that of an equal value of coal, although the cost is far less. Price here is fixed not by cost of production or cost of service, but by value of service. The silk is so much more expensive than coal that it can afford to pay a higher charge. If the same price were charged for coal as for silk, coal could not be transported at all, as the price would be prohibitive; and as long as the charge for coal is higher than the mere hauling expenses, the charge for silk is lower than it would otherwise be (see § 210). The principle of value of service is only another way of stating the law of marginal utility, and it shows clearly that cost of production in itself is not the ultimate regulator of value. In the same way, when domestic manufacturers get rid of a portion of their surplus output by "dumping" it abroad at prices far lower than at home, it does not follow that the lower foreign prices make the domestic price higher than it would otherwise be.

On the contrary, the foreign sales at the lower price may be the only means of keeping the factory going, and may thus make the domestic price lower than it would be if the producer had to charge up to his domestic goods the total expenses of unremunerative production. Cost of production is coming more and more to mean joint cost; the price of a given product may bear only a remote relation to its individual cost of production.

108. Equilibrium of Normal Demand and Normal Supply.

In the preceding sections we have several times spoken of normal value depending on cost of production. In reality it is only normal supply price that is directly related to cost of production, while normal demand price depends on the strength of the effective demand. It remains, then, to consider the mutual influence of normal demand and normal supply.

While the existence of a demand is the fundamental cause of value, the influence of supply shows itself in the fact that the tendency of normal value is to adjust itself to the cost of production, as we have explained the term. A change in the normal demand for reproducible goods means a change in the normal supply; but whether it means a change in normal value depends on the law of cost. If the demand for a commodity increases greatly, the permanent output will be larger. If the industry is subject to the law of constant return, the price will not change, because the larger supply and the larger demand will still balance each other at the old price. But if the industry is subject to the law of increasing return, where a larger output involves a relatively smaller cost, the result will be that the producers will be able to throw on the market more than is needed, and the influence of this augmented supply will reduce the price, until there is now a new and permanent equilibrium of demand and supply at the lower price.

Since diminution of cost of production is attended by lower

prices and larger output, the influence which seems to affect normal value is the change in cost of production.

In truth, however, demand is a factor of at least equal importance in fixing normal as well as market value. Unless the producers can dispose of their enlarged output, they will have no inducement to continue. If the demand cannot be changed, the price cannot. But if the demand can be stimulated by the lower price, the supply will be increased until there is a permanent supply at a fixed cost to satisfy the permanent demand. If the supply changes owing to an alteration in cost, there can be a permanent supply at this new cost only if there is a new permanent demand. In every case there can be a normal price only if there is an equilibrium between the normal demand and the normal supply. So that when we say that normal price is fixed by the cost of production, we really mean that it is fixed *at* the cost of production. Only in this sense can we speak of normal value depending at any given moment on maximum cost, or tending in the long run toward minimum cost, or being influenced in particular cases by joint cost.

109. Influence of Normal Price upon Market Price.

It is therefore inexact to say that market price depends on demand and supply, while normal price depends on cost of production, if we mean by this that the two statements are opposites. All price depends on demand and supply, but in the case of reproducible goods the permanent equilibrium between demand and supply tends to adjust itself to the cost of production. The rapidity with which this adjustment takes place depends on the relative changes that occur in demand and supply. If the stock of cotton prints produced at a cost of twenty cents a yard is large, and if the introduction of the newer ten-cent prints of the same quality is slow, the price will not at once fall to ten cents. There will be a tendency for the price to adjust itself to the new

cost, and the greater the relative supply of the new cloth, the more quickly will the price fall. As soon as purchasers know that they can get the same goods cheaper by waiting a short time, only those who cannot afford to wait will be willing to pay more ; and it is their demand which for the time prevents the subsidence of the price to the new cost level. When the new level is reached no further change takes place, the conditions will be static and the normal price permanent.

If, on the other hand, the cost of cloth continuously falls owing to the introduction of successive improvements, the normal price will itself be changing. The market price will move in the direction of the new cost or normal price, but the fall in cost may be so rapid, and the influence of the old stocks so great, that the actual market price may not at any moment quite reach the normal price. There will be a perpetual chase, but no reaching of the goal of equivalence between the market and the normal price. There will be no permanent equilibrium, because there will be a continual change in the forces affecting the supply and the demand. Under dynamic conditions the normal price of commodities may never emerge, but its influence is none the less marked.

110. Normal Monopoly Value.

The foregoing discussion has proceeded on the assumption of competitive conditions. If by monopoly we mean the usual case of sellers' monopoly, the difference between monopoly and competition lies entirely on the side of supply. Unless there is a change in price, permanent demand will not ordinarily change simply because competitors are supplanted by a monopolist. But the conditions affecting permanent supply are at once altered by such a transition.

In the first place, monopoly supply price is not necessarily a unitary or single price. The monopolist may make great profits by selling different parts of the supply of the same commodity at different prices. The principle here, however,

is precisely the same as in the case of monopoly market price, which has been mentioned above (p. 235). There may not be one normal price, but several.

Secondly, marginal cost has no influence on price. It may indeed happen that the monopolist controls several factories which work under different advantages so that technically there may be differences in their expense of production. The point, however, is that no force exists tending to fix the price at the point of greatest cost. One cotton factory in the trust may produce prints at five cents, another at ten ; in the absence of competition there is no reason why the trust should sell all the goods at ten cents.

If monopoly price is not influenced by marginal cost, is it affected by cost at all? Assuredly, but in a more indirect way than competitive price. Monopoly price is always at the point of maximum monopoly revenue. The monopolist, like every one else, wants to sell the greatest amount at the highest price ; the monopolist, however, controls the supply. Since increased supply ordinarily means lower price, he will experiment until he finds the point of greatest net returns. The influence of demand over which he has no control is as potent as in competition ; the law of substitution works here as there. If by reducing prices one-half he doubles his sales, the gross receipts will be the same as before ; if he cannot double his sales, the gross receipts will fall off ; if he more than doubles them, his gross receipts will increase. Thus the elasticity of demand is of paramount importance.

Since the supply, however, costs something to produce, his net profits will depend on the surplus of gross receipts over cost. This surplus will vary not only with the elasticity of demand, but also with the elasticity of supply. In other words, if the industry is subject to the law of constant cost, the maximum monopoly revenue will be reached at an easily ascertained price. If he charged less, he would sell more, but not enough more, to compensate him at the lower price for the total cost of the increased output ; his gross receipts would not

rise as fast as his aggregate cost. On the other hand, if he charged more, the sales would fall off so quickly that the decrease in his gross receipts would not be offset by the lower aggregate cost of the entire output.

If, however, the industry is subject to the law of increasing cost (diminishing returns), the maximum monopoly revenue will be reached at a higher price; if it is subject to the law of decreasing cost (increasing returns), it will be reached at a lower price. Suppose that the demand is such that the price falls off regularly with the increase of output. Then according to the law of constant cost we should have a table like this :

Units Sold.	Price per Unit.	Gross Receipts.	Cost per Unit.	Total Cost.	Net Receipts.
	Cents.		Cents.		
500	30	\$150	10	\$50	\$100
1000	25	250	10	100	150
2000	20	400	10	200	200
3000	15	450	10	300	150
4000	10	400	10	400	—

Thus the monopolist will make the largest profits by putting the price at 20 cents and by selling 2,000 units. But if the law of increasing cost applies, according to the figures in the fourth column, it will pay him to put the price at 25 cents and to sell only 1,000 units. For :

Units Sold.	Price per Unit.	Gross Receipts.	Cost per Unit.	Total Cost.	Net Receipts.
	Cents.		Cents.		
500	30	\$150	10	\$50	\$100
1000	25	250	12	120	130
2000	20	400	14	280	120
3000	15	450	16	480	—30
4000	10	400	18	720	—320

On the other hand, if the law of decreasing cost applies, he will find it to his interest to charge only 15 cents and to sell 3,000 units. For:

Units Sold.	Price per Unit.	Gross Receipts.	Cost per Unit.	Total Cost.	Net Receipts.
	Cents.		Cents.		
500	30	\$150	10	\$50	\$100
1000	25	250	8	80	170
2000	20	400	6	120	280
3000	15	450	4	120	330
4000	10	400	2	80	320

In every case, as we see, there is a definite maximum monopoly revenue.

Monopoly price is therefore influenced by cost of production, but in a different way from competitive price. Whether it is higher than competitive price depends again on cost. Ordinarily it will be higher, because competitive price is cost price (*i. e.* marginal cost price), while monopoly price is above cost price. Where a monopoly, however, is created by former competitors to avoid some of the wastes of competition, the cost may be reduced so materially that it will be profitable for the monopolist to sell a largely increased supply at a lower price. In such a case monopoly price may be lower than competitive price.

In some cases, again, monopoly price may be only very slightly above competitive price. It frequently happens that what seems to be monopoly is really subject to potential competition. As long as the monopolist is content to charge a price low enough to give only moderate profits, he may retain control of the output. But if he raises the price to an excessive point he may either tempt other producers into the field or lead the consumer to choose some substitute. This latent or potential competition is a factor to be reckoned with in all cases where the monopolist is not safely intrenched by some legal or permanent economic advantage.

Since monopoly profits depend partly on cost, the intelligent monopolist will strive to avail himself of the newest processes to reduce cost. Provided that demand is expansible he will seek to reduce price as long as gross receipts increase faster than aggregate cost ; the greater the reduction of cost per unit, the more probable will this result be. Thus under favorable conditions monopoly price tends to fall, even though at any time it may be above competitive price. The price of oil charged by the Standard Oil Company, for instance, has on the whole fallen, even though the fall in price has not kept pace with the still greater fall in the price of the crude petroleum. But where the demand is not so expansible as in the case of municipal street railways or the gas supply, or where the monopolist pursues a short-sighted policy, the gap between monopoly and competitive price widens.

CHAPTER XVII.

THE GENERAL LAW OF VALUE.

111. References.

J. B. Clark, *Distribution of Wealth* (1899), chs. xvii, xxv, xxvi; F. A. Fetter, *Principles* (1904), ch. xlivi; A. Marshall, *Principles* (1898), bk. v, ch. xiv; F. v. Wieser, *Natural Value* (1893), bk. iii, ch. viii; H. R. Seager, *Introduction* (1904), chs. xv, xvi; E. S. Meade, *Trust Finance* (1903), chs. xvi, xvii; E. R. A. Seligman, *Shifting and Incidence of Taxation*, (1889), bk. ii, ch. iv, part 2, ch. viii, and *Social Aspects of Economic Law*, Presidential Address in Am. Econ. Assoc. Publications, 3d series, no. 1 (1904).

112. Value and Cost of Production.

In the preceding chapter we have dealt with the value of reproducible goods. Value, however, attaches also to non-reproducible concrete goods as well as to relations and privileges, to human services and to a fund of capital. How far is the value of these related to the cost of production?

It is clear that in the case of concrete non-reproducible goods value stands in no assignable relation to cost of production. The most prominent example is land. Land is not the result of production. To be sure, if a piece of virgin land lies idle and a town springs up around it, it will soon acquire an increased value; yet neither the land nor any of its qualities has been produced by human agency. Efforts may indeed be expended on the soil, and in that sense some of its qualities might be deemed to be in part the result of production, but even here its value stands in no relation to the efforts of the individual. Again, take a piece of old sculpture or furniture. It cannot be reproduced; it may sell for a thousand times the original cost. Finally, consider two equally good pictures by a

great painter but finished, the one before and the other after his attainment of renown. The difference in their value cannot be explained by any difference in cost of production. In short, the value of concrete non-reproducible goods is neither fixed nor measured by cost of production, either because they have never been produced at all by human agency, or because they cannot be reproduced, or because there is no assignable relation between the effort of the producer and the present price of the product. Whether these goods be rented or sold, their rental as well as their capital value does not depend on cost of production.

The value of that class of economic goods known as relations and privileges likewise stands in no direct relation to cost of production. Privileges and relations vary as much in character and value as any other kind of economic goods. They may represent only a single use, like a put or call on the stock exchange, or a continuous series of uses, like a perpetual franchise of a corporation. When they are capitalized, their value, like that of all other goods, is affected by the durability and certainty of enjoyment. A permanent franchise of a railway differs from the limited privilege of a patent; but in the one case as in the other the durability and certainty of the use are independent of the personality of the possessor. With the good-will of a business, however, the continuance of profitable relations is often so largely conditioned by the business capacity of the temporary possessor that there is less difference between capital and rental value than in the case of a more permanent or a perpetual privilege. In some instances the trade-mark is the chief asset of a business. The president of the American Chicle Company recently testified that the consumers of chewing gum had become so accustomed to certain well-advertised brands that the company was able to pay dividends on a capitalization nine times the amount of tangible assets. Over eighty-eight per cent of the value of the property was due to the trade-mark.¹

¹ U. S. Industrial Commission, Final Report, § 612.

Whether privileges are durable or ephemeral, it is clear that their value — whether rental or capital value — does not depend upon any cost of production. The good-will of a business may indeed in one sense be deemed the result of laborious exertion, but the value of the good-will does not stand in any assignable relation to the exertion. It may exist to-day and disappear to-morrow, without any visible change in the proprietor. Most franchises and privileges, moreover, are not the result of any one's exertion ; they are the consequences of intricate social relations, and consist of the opportunity of turning these relations to profit. Take even so simple a case as that of a news-stand in a city. The owner often rents out the privilege of serving newspapers to a list of customers, and when the stand is sold outright the chief constituent in the price is the value of the "route," — the capitalization of the income from the privilege of serving customers. Yet this route may have cost the original owner nothing to acquire ; as the street was built up, the route increased in value, as it were automatically. So also the franchise of a railway, the circulation of a country newspaper, the selling value of a gas or water company grows with the mere process of time and the increase of population. The social relations which form the basis of their activity are not produced by any individual ; the privileges of utilizing these relations have no cost of production. Yet they have a very decided value.

It is not necessary to illustrate further. All these things — relations, privileges and non-reproducible concrete goods — are daily bought and sold in the market-place, and yet their value does not directly depend on their cost of production and cannot be measured by it. Since cost of production cannot be the general law of value, what is that ultimate law?

113. Value and Efficiency.

We have learned that value is at bottom the expression of marginal utility. It follows that all prices must be studied from the point of view of marginal utility, that is, of the power

of marginal increments of supply to satisfy the marginal increments of demand. This is only another way of stating that the fundamental explanation of value is marginal efficiency, or the capacity of marginal units to satisfy marginal wants.

(1) In the case of concrete non-reproducible goods this is patent. When a farmer hires a piece of land, the rent which he pays depends on the produce of that special grade of land as compared with others. When a speculative builder secures a site, the price of the lot is fixed by its capacity, from the point of view of eligibility, to satisfy the wants of a particular class of tenants. Whether he pays a capitalized purchase price or an annual rent, as in England and some parts of America, is immaterial. Again, the value of a painting, old or new, is regulated by its capacity to appeal to the taste of a particular class of amateurs, that is, by its marginal efficiency in contributing to the satisfaction of certain wants. Cost of production, as we have learned, plays no direct rôle in the determination of value of this entire class of cases. Not cost, but efficiency, is the explanation.

(2) With that class of economic goods that we have called relations or privileges the situation is analogous. The rental of the news-stand, the franchise of the gas company, a patent or copyright, a new brand of goods or a trade-mark,—the value of all such intangible relations depends on the extent to which they contribute to the earnings of the business. Their value is conditioned by the marginal efficiency of the services which they render. The cost may have been zero; — not cost, but efficiency, affords the clue.

(3) The great mass of concrete reproducible goods has been discussed in the preceding chapter. Here indeed cost of production seems to be of commanding importance. As we have learned, however, it is not so much that prices of such goods are fixed by the cost of production as that they are fixed *at* the cost of production. The value of all production goods is derived from the value of their products, — the

consumption goods ; the value of the raw material is derived from the value of the finished product. The price of pig iron depends on the price of the nails, billets and all other iron products into which pig iron enters as a constituent. If the demand for these products should diminish, the price of pig iron would fall, those who produced at a higher cost would stop producing, and the new (marginal) cost of production would adjust itself to the new price. There is an abundance of silver below the surface that is not mined because it will not pay ; if the marginal efficiency or value of silver should rise, these more expensive grades would at once be marketed and the new marginal cost of production would adjust itself to the price. The price would not rise *because* the cost increased ; but the higher price would be fixed *at* the higher cost because that would now be the new point of marginal efficiency.

(4) We come, finally, to the value of human services and of the fund of capital. Wages and interest are of such signal importance in the distribution of the social income that their fuller discussion will be reserved until later. It may, however, be said provisionally that they, like everything else, derive their value from the marginal increments of the services which they render, that is, from their marginal efficiency. To the extent that labor is productively employed the rate of wages in each grade of labor must in general tend to equal the marginal efficiency of the labor, that is, its contribution to the product at the margin of employment. In the same way the rate of interest will tend to equal the marginal efficiency of capital, that is, the actual contribution of the marginal increment of capital employed. How these marginal contributions of both labor and capital are to be measured, and how the changes of actual life move the margin of this efficiency up or down, remain to be considered later.

Labor and capital, however, are susceptible of increase. Will they then not increase up to the point of continuous cost of reproduction, and can it not be said that their value is fixed

by the cost of production? In the case of labor, if by cost of production we mean the cost of the physical reproduction of the laborers, we encounter the difficulty that human beings are not reproduced for economic reasons. But even if we restrict our attention to the economic causes of the growth of population, and aver that the future supply of laborers depends on the cost of reproduction, that is, of bringing them into the world and nourishing them until they become self-supporting, the obvious rejoinder is that this expense is a result rather than a cause, and that what the laborer can afford to spend on his family will depend upon the wages which he receives. It is as in the case of reproducible commodities, where value is fixed *at* the cost of production, but not *by* the cost of production. The contribution or efficiency is the positive cause; the cost of production adjusts itself to this.

In the same way, to speak of the cost of production of the mass of capital is ambiguous. Capital as a fund or embodiment of value has in one sense no assignable cost. To ask what is the cost of production of a thousand dollars is unmeaning. The thousand dollars may represent the present value of no longer fashionable dress-goods which originally cost fifty thousand dollars, or it may represent the value of a newly discovered petroleum well which cost the finder nothing. In another sense, however, capital has a cost. The mass of capital consists of individual pieces of capital, and the increase of capital depends ultimately, as we shall see, on the readiness to forego present gratifications for future satisfactions. This readiness involves a delay and generally therefore a cost; and interest, as we shall learn, may be explained in terms of this marginal cost. But here again the cost would not be undergone if it were not for the services to be enjoyed. So that in the end it is the efficiency of the service which is the positive factor. The cost adjusts itself to the service.

Thus the great law of value is marginal efficiency. When the economic good is used for productive purposes, marginal efficiency becomes marginal productivity; but when it is used

for purposes of consumption, we cannot well speak of productivity. Not only in the case of wages and interest, but in the case of economic relations and of concrete commodities, reproducible as well as non-reproducible, prices depend on marginal efficiency. In all economic goods except labor, we have to deal with capital values; in all economic goods except the fund of capital we have to deal with rental values: the rental as well as the capital values of all classes of goods depends on their marginal efficiency. In some cases marginal efficiency means marginal productivity; within this class again marginal productivity is in some cases equivalent to the cost of production. Cost of production is thus only a partial, and even then a proximate, explanation of value; marginal efficiency is the universal and the ultimate explanation.

114. Efficiency and Capitalization.

Because of this frequent lack of correspondence between value and cost, the problem of the valuation of complex goods often becomes one of extreme difficulty. Where such a good regularly changes hands on the competitive market, the difficulty is obviated by the automatic action of the forces of demand and supply; its earning capacity or marginal serviceableness can be gauged with almost unerring accuracy, and there will be a fixed rate of capitalization depending, as we have learned, on the durability and certainty of income. A good example of this equilibration between income and capital value is seen on the stock exchange, where the slightest alteration in present or prospective earnings is at once reflected in a fluctuation of the quotations. Even here, however, we must remember that the stock exchange quotes only market values; and that these market values are liable to be affected by all kinds of speculative influences not connected with real earning capacity.

In actual life we have to deal with all possible combinations of economic goods. The value of a simple reproducible commodity may indeed be explained by or referred to the cost of

production, because at any given time this cost is adjusted to the price ; but the value of a complex product or business may bear only a slight relation to cost. The value of a livery stable differs somewhat from the value of reproducing the horses, carriages, harnesses and buildings ; the value of a huge steel plant differs considerably from the cost of the land, the buildings and the machinery ; the value of a railroad has still less relation to its cost of production or of reproduction. In such cases we have to do not only with reproducible products, like the concrete articles of steel or the acts of transportation, but with non-reproducible commodities and relations, like the good-will of the firm, the favorable location of the railroad, the ability of the managers, and all the other factors which cannot be duplicated, but which enhance the profitableness and therefore the value of the business. Their selling value is a capitalization of their estimated future uses.

The problem of capitalization in its relation to efficiency has become important in three fields, — that of taxation, that of regulation and that of investment. To each of these we must now turn our attention.

115. Valuation and Taxation.

In taxation the problem presents itself in two forms. The first arises in those countries which still retain the property tax. The difficulty can be illustrated by the taxation of corporations. In Europe corporations are assessed on their income, which is ascertained according to fixed rules. In America corporations are, for reasons already mentioned (p. 15), usually assessed on their capital value. How, now, is this to be measured ? The corporate securities are often not dealt in on the stock exchange, and even when there are such dealings, the daily prices may be affected by speculative causes. The cost of production is of slight assistance, because it can manifestly apply only to the concrete tangible property, and is even there inadequate. It is for this reason that the valuation of the corporate franchise, as the chief intangible element, has

become such a burning question in the United States. It is plain, however, from the foregoing discussion, that no final solution of the problem is possible until property assessments are brought into a definite relation with earning capacity. When commodities frequently change hands, as is the case to-day with the mass of concrete goods, real or personal, property is a simpler basis of assessment than income, because the market influences automatically capitalize the income. But when sales are infrequent, as with so many modern corporations, income or rental value is the better basis, and the so-called 'property assessments' must ultimately adjust themselves to the earning capacity. The practical difficulty connected with the ascertainment of net earnings has led many States to adopt the system of gross earnings taxation. This is, however, a rough device, which fails to secure justice as among the members of each class; corporate gross earnings tell us as little about relative net earnings as the mere size of a man's business about his profits. It is significant that in the newest attempts to fix the property valuations of railroads, as in Michigan, the assessors after computing the selling value of the tangible property estimate the value of the intangible property by capitalizing a certain portion of the income at a given rate. Taxable value is made to depend ultimately on earning capacity, — that is, on marginal efficiency.

The other phase of the problem is of broader application. The well-nigh universal source of state and local revenue in America is the general property tax. Ability to pay is deemed to be the fundamental canon of taxation, and a man's ability is measured by his property. Owing, however, to the growing difficulty of ascertaining all the items of property, certain classes are reached with less accuracy than others, and the tax becomes virtually a partial property tax. From this inequality of taxation flow two important consequences. In the first place we have the phenomenon of diffusion of taxation. Where a particular class of property is singled out, the tax will often be shifted from the producer to the consumer, or from the

vendor to the purchaser. If a special tax, for instance, is levied on leather, and the conditions of the trade are such that the marginal leather dealer can still remain in business, the tax will be added to the price that the shoemaker has to pay ; and under similar conditions the shoemaker will increase the price of shoes to the consumer. The tax is shifted from one class to another until it is diffused throughout the community. If a special tax is levied on houses, and population nevertheless continues to increase, the tax will be shifted from the owner to the tenant, and if the tenant happen to employ the premises for business purposes, the tax will be added to the price of the goods displayed for sale. Furthermore, if these goods are utilized as the materials of some new production, the process will repeat itself, until the final consumer is reached. If a tax is levied on real estate mortgages, the rate of interest will rise by at least the amount of the tax, and the burden will be borne, not, as is often assumed, by the one who lends, but by the one who borrows ; and if the borrower happens to be a housebuilder, it will be further shifted to the purchaser and again to the tenant, with ulterior consequences analogous to those just described. Through the process of shifting, taxation of the property often turns out to be different from taxation of the property owner.

On the other hand, when, instead of dealing with perishable things like leather or houses, or with a mere right to a sum of money like a mortgage, we deal with more permanent things, like a piece of land or the fund of capital itself, the influence of capitalization makes itself apparent. If a tax of one per cent is imposed on a five per cent hundred-dollar bond selling at par, the net proceeds to the new purchaser will be only four dollars, and the price of the bond will fall to eighty dollars,—four dollars bearing the same proportion to eighty dollars as five to a hundred dollars. There is no reason why people should content themselves with four per cent earnings when the general rate of interest in the untaxed field is five per cent. In the same way, when a special tax is levied

on land, its value will be reduced by the capitalization of the tax. The important consideration in each case is the net income, or net rental; and when this is curtailed by the imposition of a tax, the selling value will be reduced in proportion. Since the selling value is the capitalization of the rental value, the diminution in the selling price is equivalent to a capitalization of the tax. When a new purchaser buys the bond or the land, he discounts future taxes of the same rate by paying so much less for the property; in other words, he buys himself free of the tax. Just as the tax in the preceding case was shifted, so now the tax is absorbed,—absorbed into a lower selling price.

The far-reaching consequence is this: when classes of property are taxed, the processes of diffusion and of absorption often result in what may be termed the final disappearance of the tax. Under the competitive conditions of modern business enterprise, when people part with their property the tax tends finally to disappear as a permanent burden on the class upon which it is sought to be imposed. It is not necessary, therefore, in order to secure justice in taxation, that all individuals or every item of property be taxed. Within each class of property holders every one indeed must be assessed; but as between the classes of property economic forces will bring about a readjustment. The process is often a painful one, and in order to injure the present owners as little as possible great care must be observed in altering existing methods. But the ideal of imposing taxes on property, rather than upon individual property owners, must be constantly kept in mind. The attempt in the United States to assess every person upon all his property creates gross injustice, because by our hit-or-miss system some individuals in a given class are assessed and some escape. Those that escape are generally the wealthy; those that are reached are for the most part the ones who cannot afford to pay. The general property tax practically results in a travesty of justice. When we abandon the impracticable attempt to tax all property owners alike, and when,

realizing that taxation like value itself is a social phenomenon, we learn to tax some kinds of property rather than all kinds of individuals, we shall have made a great stride forward in practical as well as theoretical justice. It is a process which is now slowly going on in the more advanced industrial communities of America. Consciously or unconsciously, it rests upon the conviction that capital or property values depend in last instance on marginal efficiency or net earnings.

116. Valuation and Regulation.

Another phase of the problem is seen in the difficulty connected with the official regulation of rates charged by railroad, gas or water companies. Where such businesses tend to become monopolies the legislator seeks to protect the consumer from exorbitant charges by fixing maximum rates. In justice, however, the criterion of what is fair to the consumer must be affected by what is fair to the producer, for the producer is also entitled to a fair return on his capital. The whole problem thus hinges on the question: what is the relation of the actual capital value of the business to the invested capital? Is the actual value the par value of the securities? Manifestly not, because the stock may have been watered to such an extent that its actual value is only a fraction of the par value. Is it the market value of the securities? Not always. For the market value of the bonds depends not only on the rate of interest, but also on the period for which they have to run. If a four per cent bond sells at par, a six per cent bond of the same corporation and of the same security would normally sell around 150. But if the four per cent security is a long-time bond, and the six per cent a short-time bond, the difference will be far less. Furthermore, even if they are both fifty year bonds but emitted at different periods, and if the six per cent bond matures in a few years, the premium will rapidly decline with each ensuing year until it finally disappears. The market value of the bonds hence depends largely upon the conditions of repayment, and is to this extent divorced from

the value of the corporate property as such. Moreover, if we take stocks instead of bonds, we find that the value of the corporate property cannot be strictly measured by the market value of the shares, because this market value is subject to violent oscillations on the stock exchange. The market value of the shares of the Third Avenue Street Railway Company in New York fluctuated a few years ago over one hundred per cent in the same year. On what basis could the real value have been computed?

Finally it may be asked: is the actual capital value of the corporation to be measured by the cost of production or of reproduction (or, as it is sometimes termed, the cost of replacement)? Here, again, the answer is, not entirely. For this method would take no account of the franchises, acquired relations and general business conditions which have developed, and for the creation of which the corporation may or may not be responsible. A railway running through a frontier community may cost in stretches as little as fifteen thousand dollars a mile to build; after the lapse of twenty years, the cost of reproduction as measured by double tracking, better roadbed, new stations, bridges, equipment and increased value of the land may be perhaps thirty thousand dollars a mile. Yet a capitalization of the actual earning capacity might result in at least double that sum. To declare the entire difference to be "water," and to adjust rates so that the old stockholder should not profit by the building up of the country, or so that the new purchaser who has invested in good faith should have his income cut in half, would manifestly be unjust. A corporation, like an individual, is entitled to participate in the advantages of general prosperity.

The Supreme Court of the United States has recognized the truth that not one, but all of these factors must be taken into consideration.¹ The ultimate test of fair capital value depends

¹ *Smythe v. Ames*, 169 U. S. 466 (1898). "In estimating the value of a railroad, the following points must be considered: The original cost of construction, the amount expended in permanent improvement, the

on a comparison of the earnings of the enterprise in question with those of well-managed and reputedly not overcapitalized undertakings of a similar character.

117. Valuation and Investment.

The third difficulty connected with valuation and capitalization is seen in the flotation of securities at the time of the organization or reorganization of great business enterprises. In former years the chief example was that of railroads. While the early, small railroads were largely built on the proceeds of money actually invested by the shareholders, it was not long before the doubtful success of the more elaborate enterprises in newer sections led to the issue of mortgage bonds, often below par, while the stock was sold at an insignificant price or even presented to the shareholders, in order to make a better market for the bonds. In the same way, when railways were amalgamated or reorganized, the issue of new stock often exceeded the aggregate of the old, the excess representing the capitalization of the increased earnings which it was expected would result from the combination. In these two cases the issue of stock might be economically justifiable either as the sole practicable method of securing capital for a new and doubtful enterprise, or as the best means of reducing prospective earnings to a present basis. In the one case the stock presented or sold at a discount represents the present worth of an insecure and speculative future; in the other case the stock is the capitalization of a future income, just as the issue of securities for doubling the track is legitimate only when the traffic is expected to be so heavy as to increase the income at least to the point of earning a return on the new capital. In all such cases we cannot properly speak of overcapitalization or stock-watering.

Unfortunately, however, there is always the danger that the anticipations may be mistaken, or that the calculations may

amount and market value of the bonds and stock, the present as compared with the original cost of construction, the probable earning capacity of the property, and the sum required to meet operating expenses."

be designedly falsified in order to enable the manipulators to dispose of stock whose worthlessness they suspect or know. Finally, when it seems desirable, for the purpose of evading legislative restrictions or of placating public opinion, to keep down the dividend rate, the amount of stock may be augmented by the device of scrip dividends or an increase of the nominal amount of the securities in the hands of the shareholders. In all such cases we have to deal with stock-watering pure and simple,—that is, the creation of additional securities which do not represent additional earning capacity.

Since the formation of the modern industrial combinations known as trusts, this aspect of capitalization has assumed still greater importance. The chief danger of the situation consists in the facility afforded to unscrupulous promoters to finance the organization of the combination in such a way as to deceive the investors and to reserve the greatest profit for themselves, by selling the inflated securities at prices wholly unjustified by prospective earnings. The mere fact that the united capital of a combination exceeds the aggregate capital of the constituent companies does not prove the existence of overcapitalization; for if the new enterprise is honestly financed and well managed, the very fact of union may so enhance the earning capacity of the whole as to justify this capitalized anticipation of estimated profits. The distinction between economic and uneconomic finance or between actual value and water in the investment of capital is not only the distinction between honesty and dishonesty but between intelligence and stupidity. While stupidity will always avenge itself on the stupid, the burden of dishonesty is likely to be borne by the innocent victim. When the loophole of competition is left open, the victim is not the consumer but the unwary investor; when competition is stifled, the loss may fall on either or both. The modern demand that government should at least insure publicity of accounts and a reasonable correspondence between the prospectus and the actual facts in organizing vast enterprises is a natural result of the dangers of overcapitalization.

Book II.

Value and Production.

CHAPTER XVIII.

CHARACTER AND FACTORS OF PRODUCTION.

118. References.

A. Marshall, *Principles* (1898), bk. iv, ch. i; W. Smart, *Distribution of Income* (1899), bk. i, ch. v; F. A. Fetter, *Principles* (1904), ch. xxviii; J. S. Nicholson, *Principles* (1893-1901), bk. i, ch. ii; J. A. Hobson, *Economics of Distribution* (1900), ch. vi; H. Sidgwick, *Principles* (1883), bk. i, chs. i, iv; F. A. Walker, *Political Economy* (1888), part 2, ch. iv.

119. Production: Its Meaning and Relation to Consumption.

All wealth may be regarded from the point of view of the producer or of the consumer. Commodities in the hands of the consumer and destined to immediate consumption are sometimes called consumers' goods, while those forms of wealth reserved for the purpose of increasing the stock of consumable commodities are called producers' goods. Because the latter serve as instruments of production, they are sometimes called instrumental goods.

Production and consumption clearly refer only to utilities. Man can create nothing material; he can only impart motion to particles of matter and so rearrange them that in their new form they will gratify some desire. So also he can destroy nothing material, for matter is indestructible; he can only so rearrange the position of the particles as to put an end to

their utility in that particular form. Production and consumption thus mean the creation and destruction, not of matter, but of utilities through the movement of matter.

From a certain point of view production and consumption are two sides of the same thing. All wealth is sooner or later destroyed in the sense that the utilities embodied in the particular commodity finally come to an end. Every new arrangement of matter by man ultimately involves an act of consumption, partial or complete. We cannot produce anything without consuming something,—either commodities or energy, which is itself in last resort maintained by commodities. We can make steam only by using coal; we can produce goods only by wearing out the tool or machine. Not only does production involve consumption, but consumption might be said to involve production. Production is the creation of utilities. Commodities are consumed because they satisfy some want, and in satisfying this want they impart utility. So that all consumption short of wanton or accidental destruction would seem to imply production, because it indirectly yields utilities. Consumption would then involve production, just as production involves consumption.

The distinction, however, is none the less real, even though difficult to draw in special cases. The criterion of production is not the imparting of a utility, but the creation of a new utility. It is only when an action brings about an addition to the existing sum of utilities, when, in other words, there is a resulting surplus of utility, that we have an act of production. When a railroad company buys coal and converts it into locomotive power, there is an act of production, because, notwithstanding the consumption of the coal, the utilities afforded by the steam replace those afforded by the coal together with an addition. There is more wealth than before. On the other hand, the food which a man consumes, although it serves to keep up his strength, imparts to him certain personal qualities which, as we know, are not wealth. They may help him to produce wealth in the future, but do not in themselves

constitute wealth. The consumption of coal by an engine and of food by a laborer are therefore not on a par ; the one is an act of production, the other an act of consumption. In the one man produces wealth ; in the other wealth produces man. Production and consumption are as opposed as wealth and man.

Since wealth and man are mutually interdependent, production and consumption are closely related. In a well-ordered community the object of consumption is more production of wealth and ultimate welfare. Consumption, however, does not necessarily lead to this result. A glutton who wastes his life in riotous living decreases his power of serving others. Thus, while consumption may be productive in the sense that it creates the conditions of a future production, consumption differs from production. Wise consumption indeed leads to more production : only in this sense are they two aspects of the same thing. The whole economic process is a flow of utilities from nature to man, and back from man to nature.

It is important to remember, moreover, that the utilities which constitute wealth are not necessarily embodied in tangible objects. Production is not limited to the creation of physical commodities. The older economists maintained that the labor of servants, actors and the professional classes in general was unproductive, because not incorporated in visible objects. So other writers, like Carey, have urged that the trader is unproductive ; and still others, like the Physiocrats, have contended that only the farmer is really productive. To those who understand that human wants are satisfied by utilities, irrespective of the source whence they flow, it is clear that all labor which engenders such utilities is productive. Labor is unproductive only when its efforts are wasted. If I write a book which is read, or make a table which is used, my labor is productive ; if the book is a failure, or the table useless, my labor is unproductive. The trader, the lawyer, the doctor, the artist, are no less productive than the workman, the farmer or the manufacturer, provided they accomplish

something that society wants. The test is the creation of new utilities or values.

The utilities of which we speak are, again, not necessarily direct utilities. The making of electric lights is the creation of direct utilities; the erection of a successful school devoted to the study of electricity is the creation of indirect utilities, because it will ultimately result in better and cheaper lights. In the one case we are producing commodities, in the other productive forces; in both cases we are contributing to the production of wealth. In the same way the sums expended by a government for its army and navy may be productive in the highest sense if, as sometimes happens, they really contribute toward the protection or furtherance of the national industry or of the national existence which makes industry possible. If they do not do this, they are unproductive, but only in the sense that any unnecessary or wasted effort is unproductive. Intangible products, like culture and taste, are often extremely important to individual and state alike, and when they rest on a broad basis of tangible wealth they are the distinguishing mark of a high civilization.

120. Kinds of Production.

Production of wealth thus means the creation of new utilities. The utilities that can be added to things are of three kinds,—material, place and time utilities. A material utility¹ can be created by an alteration in any property of matter; a change in the form, shape, weight, color, taste, smell or any other quality of a thing which increases its capacity to satisfy human wants is the creation of a new material utility. Utility can, however, also be enhanced by a change of place. A thing in one place may be worth more than in another. If the wheat were allowed to remain on the Western plains, its utility would be greatly circumscribed; instead of satisfying the wants of millions, it would be consumed only by thousands. Finally,

¹ Some writers speak of this as a form utility. It is clear, however, that form is not the only quality susceptible of change.

utilities can be augmented by a mere change in time. The alteration may take place in the supply : certain kinds of wine, musical instruments and similar products improve in quality through the mere lapse of time ; forests, flocks and the like increase in quantity. More frequently, however, the alteration occurs in the demand : things may be more useful at one period than at another. The efforts expended in holding the commodity until it can be of the most effective service involve the creation of time utilities.

All wants are satisfied, if at all, at a given time and place. The creation of time and place utilities is as truly productive of wealth as the creation of elementary material utilities. In each case we enhance the capacity to gratify desires. Trade and transportation, which deal with place utilities, as well as speculation and insurance, which deal with time utilities, are no less productive than the activity expended in creating material utilities. It is for this reason that the subject of exchange is properly to be regarded as a part of production. It is for the same reason that it is impossible to classify different kinds of activity as in themselves more or less productive or non-productive. The causes which condition the law of comparative costs vary from time to time and from place to place. Where land is cheap, agriculture may be more productive than industry ; where geographical conditions are favorable, commerce may be more productive than either. To raise oranges in the Arizona desert would be as unproductive as to put a steel plant in the wheat-fields of Kansas ; yet when the Arizona desert is made to bloom by irrigation, or when Kansas becomes the home of a teeming population, oranges and steel may become the most productive of enterprises. The same considerations apply to the productivity of efforts embodied in immaterial wealth. For Oklahoma to build a magnificent art gallery would be clearly wasteful ; for New York to spend large sums on music and art may be highly productive, even regarded from the narrow point of view of increasing the capacity of the artisan to create more artistic and therefore more valuable products. A high-priced

school-teacher would be as unproductive at the country cross-roads as a piano factory in Alaska. Productivity depends on the ratio of efforts to needs; with changing needs the same efforts will mean an altered productivity.

121. Factors of Production.

Since the foundations of economic life are nature and man, the primary factors of production must be natural forces and human effort. Sometimes natural forces alone suffice,—as in the case of the spontaneous increase of a herd of cattle; sometimes human effort suffices, as in the case of the rendering of a personal service; ordinarily production involves the co-operation of the two. This is sometimes expressed by the statement that the factors of production are labor and land,—a not entirely accurate statement, because land is only one of the natural elements that come into consideration. Water, light, heat, electricity, moisture and the like also play a rôle in production, and frequently constitute economic goods with a definite exchange value. Again, since the application of labor to natural elements results in material objects, which are then further utilized in production, these are often spoken of as capital, and the factors of production are declared to be land, labor and capital. Capital would then be differentiated from land in that capital is itself an artificial product, while land in the wider sense is a gift of nature.

The question whether land should be sharply separated from capital may be left for later consideration (§ 132). It may, however, be stated here that the controversy is largely one of words, depending on the sense in which capital is used. If by capital we mean a concrete commodity, the joint product of labor and nature, land is to be differentiated from capital. If, on the other hand, by capital we mean wealth as a fund, land is a part of capital, since it has a capital value. Even, however, if we consider land as a part of capital, it is so important a part that it may for many purposes be put in a category by itself.

Again, since the labor of directing or managing enterprises has become so significant, we might distinguish between labor in general and the skill or ability to conduct a business. The factors of production would then be land, labor, capital and management or enterprise. This classification, however, is not entirely free from objection. If a shoemaker works for another, his activity would be called labor ; if he works for himself, it would be called enterprise. If a factory owner manages his own plant, it would be enterprise ; if he sells it to a trust and assumes the management as a paid official, the same activity is called labor. Manifestly this overlooks the fact that there are all kinds or gradations of labor, from ordinary unskilled work to the exercise of the highest business talent. It is clear, from the examples just given, that the distinction is important rather from the point of view of distribution than from that of production. If the income from labor is a stipulated one, it is wages, whether it applies to a day laborer or a railway president ; if the income is a contingent one, it is profits. If a man uses his own unaided labor, he can earn wages ; if he combines his labor with capital in a business enterprise or if he employs other people's labor, he undergoes risks and his income is uncertain. The hired or salaried man always gets a part of the product, the independent entrepreneur may lose money instead of making it. The law of profits is different, as we shall see, from the law of wages. From the point of view of production, however, enterprise is a species of labor.

Finally, it must not be forgotten that in civilized society production is carried on amid an environment moulded by legal, political and social relations. All these may in a sense be declared necessary to production ; but as they are in theory at least applicable to all alike, they are not to be included among the economic factors of production any more than is the air which is free to all. Even where these relations in the shape of special laws or privileges favor some producers or classes, they are properly to be put under the head of oppor-

tunity to utilize labor and capital rather than under that of the primary factors of production.

Summing up, we may say that the factors of production are in one sense labor and capital ; in another sense land, labor and capital, and in still a third sense land, labor, capital and enterprise. In any sense the factors of production are human energy and natural forces, together with their joint product, capital, which may again be embodied in land or other elements of nature.

122. Production and the Producer.

Whatever classification of the agents of production may be adopted, one vital distinction must be observed. In the case of the non-human factors of production, whether they consist of natural forces or the results of the application of labor to nature, we have to deal with inanimate objects and phenomena. The laws of their increase can be considered without reference to any but the technical consequences to the things themselves. Where changes, for instance, take place in the productivity of concrete things, the social results — that is, the influence on classes of human beings — may indeed be profound, but the objects in themselves still remain inert masses, and the laws which control their earnings are irrespective of the particular individuals that happen to own them. When the machine is useless, we throw it aside ; when the land is worn out, we leave it.

On the other hand, when we deal with human energy, we cannot dissociate it from the individual who exerts the energy. This does not mean that the laws of production are less verifiable here than in the case of inanimate objects. For the personal equation or difference between individuals presents no more difficulties in analysis than do the differences between things. The distinction is to be sought rather in the fact that in the one case we deal only with the means and in the other with both the means and the end. Human energy, like inanimate objects and forces, forms the tools by which wealth

is secured ; man alone represents the end for which wealth is secured. Hence in dealing with the problems of production through human agencies we cannot eliminate the consideration of the producer as at the same time a consumer. This has a double aspect.

In the first place it admonishes us that the process of production is social, and that all production ultimately involves consumption. Any system of production, therefore, which systematically neglects the consuming powers of the producer must in the end defeat itself. The methods of production may conform to all the approved technical rules, and each industry may seem to be flourishing from the point of view of output, yet none the less the general condition of business may be far from satisfactory owing to the lack of an adequate demand. In former times, where production was relatively slight, as in the middle ages, or where it was largely based upon unpaid human labor, as in antiquity, it was the luxuries of the few rather than the wants of the many that constituted the bulk of the demand. In modern times, on the other hand, where human energy is untrammelled and the play of competition tends to become ever more free, the effective demand comes from the wants of the many. If we stunt this demand, we withdraw the chief stimulus to wealth creation. The human beings may be magnificent productive instruments, but if there is no market for their products their potential energy is not converted into actual results. The more democratic the people, the more intimate is the dependence of the productive power of the community upon the consuming capacity of the masses.

Secondly, we must be careful to take the broad view of the economic process. As we have seen, the real concern of economic inquiry is not wealth in itself, but wealth in its relation to man, or, still better, man in relation to wealth. A system of production which, however successful in other respects, relegates the human factor to the same level as the external object, is uneconomic in the broad sense, because, instead of subordinating wealth to man, it sacrifices man to

wealth. A production of wealth which is based upon disregard of the human rights of the producer is no more truly economic than is the defrauding of one party to a bargain by the other. There are certain kinds of so-called production which in the highest economic sense no civilized country can afford to retain. Slavery at one time nominally enriched antiquity, but it brutalized the slave and enervated the slave-holder, until it dried up the sources of production itself. Child labor at the beginning of the nineteenth century helped to swell the profits of the English factory owner, but was fast incapacitating the population, physically as well as mentally and morally. If the Devil must be a partner in our cotton factories, said Carlyle, we cannot afford to have the cotton factories. And in saying this he uttered a truth which was no less important in its economic than in its moral aspects.

CHAPTER XIX.

LABOR.

123. References.

F. A. Walker, *The Wages Question* (1876), chs. ii-iv and *Political Economy* (1888), part 2, ch. ii; A. Philip, *The Function of Labor in the Production of Wealth* (1890); A. Marshall, *Principles* (1898), bk. iv, chs. v, vi; J. S. Nicholson, *Principles* (1893), bk. i, chs. v, vii; F. A. Fetter, *Principles* (1904), ch. xx; R. Mayo-Smith, *Statistics and Economics* (1899), ch. iii; K. Marx, *Capital* (trans. by Aveling, 1887), chs. xiii-xiv; W. S. Jevons, *Theory* (1888), ch. v; J. A. Hobson, *Evolution of Modern Capitalism* (1894), ch. x; S. and B. Webb, *Industrial Democracy* (1904), part 2, ch. vi; S. Webb and H. Cox, *The Eight Hours Day* (18 1); L. Brettono (trans. by Arnold), *Hours and Wages in Relation to Production* (1894); J. Schoenhof, *The Economy of High Wages* (1892); E. S. Meade, *Trust Finance* (1903), ch. iv; *Thirteenth Annual Report of the Commissioner of Labor on Hand and Machine Labor* (1899); U. S. *Twelfth Census*, VII, *Manufactures*, part 1.

124. Meaning of Labor.

By labor is meant the putting forth of human exertion. The attempt to divide it into the categories of physical and mental labor is not strictly accurate. The labor of even the most unskilled workman calls for the exercise of certain mental qualities, like attention, memory and prudence; while on the other hand the intellectual effort of the great captain of industry is associated with the expenditure of a certain amount of waste of tissue. From the lowest to the highest is a difference in degree. Ordinary day laborers disclose almost endless varieties of ability, skill and technical efficiency, the result of the education of hand and brain; among the employers the differences in capacity and energy are no less marked. Labor runs through

the whole gamut, from worthlessness to highest efficiency, from the mere mechanical repetition of the simplest act to the planning of the most subtle and elaborate business scheme or intellectual result.

Under present social conditions we distinguish between laborers and capitalists, between workmen and employers. As a rough classification available for many practical purposes, this is defensible. From the point of view of production, however, it is not wholly adequate. Labor is undoubtedly different from capital, but the owner of capital may also labor. The employer is not the same as the employee, but he may work as hard and his contribution to the value of the product may be even more important. It is hence a fatal error to confine the term labor, as do the socialists, to ordinary manual labor, and to maintain that all wealth is created by labor, with the implication that all other shares in distribution are a defalcation from wages and therefore a robbery of the workman. Entirely apart from the fact that there are other factors of production, the contention overlooks the labor of organization and enterprise, of correlating the scattered elements of production and of adjusting the supply to the varied demands of a complex market. Such labor has become under prevalent conditions of even greater value to society than the mere manipulation of the tools. A modern railway president or head of a great industrial trust often receives a salary equal to that of several hundred of his workmen, and larger than that of the President of the United States. The work may not be so irksome as that of the day laborer, but it may be worth far more to society, because its contribution to the product is so much greater. The real value of labor depends not upon the conditions of employment but upon the results of activity.

125. Cost of Labor.

Economic production implies the turning out of the greatest product with the least cost. So far as the wages of labor form an element of cost, it would seem to follow that low wages or

cheap labor is a necessary condition of low cost. Before accepting this ostensibly self-evident proposition, however, it is necessary to pursue the analysis further.

In the first place, we must draw a distinction between the individual and the social point of view. Even if it were true that in a particular industry low wages denoted low cost, it would not follow that it is also true from the point of view of society. Since production is conditioned by consumption, there can be no permanent increase in output without an increase in demand. The effective demand, however, depends upon the income of the consumers. In any community the great mass of the consumers consists of the laborers. The lower the level of wages, therefore, the more restricted will be the total demand for the national products in general and the slighter the chance of reducing cost by expanding the market. Low wages which mean low cost in some industries may thus indirectly prevent a reduction of cost in other industries. Where a particular set of industries is manufacturing almost wholly for the foreign market, the effect may not be so obvious, but since, as in all international trade imports must ultimately pay for exports, the volume of the foreign trade finally depends on the capacity of the domestic consumer to utilize what is brought in. Thus even the prosperity of the export industries may be purchased at the expense of the other branches of production. Irrespective of the general question of the social desirability of high wages for the laborer himself, it is clear therefore that when we regard public wealth in general, low wages do not necessarily mean low cost. The low cost in some industries may be outweighed by the higher cost due to the lack of consumption or restricted market in other industries.

In the second place, in any single industry low wages do not necessarily mean low cost. The real cost of labor is to be measured by its productive efficiency. Just as the hundred-thousand-dollar railway president is cheap because an inferior and low-priced substitute would botch matters and increase

expenses, so in the case of the ordinary wage-earner the real cost is to be measured by the ratio of wages to the product of labor. In the Philippines the contractors find it in the end cheaper to hire the Chinamen in preference to the natives, although the former command larger wages; in the Southern cotton factories the white laborer is found more advantageous than the negro factory hand, who can be hired at a materially lower wage. Furthermore, in the same industry and with the same workmen neither an increase of wages nor a curtailment of labor time necessarily augments cost. Where a reduction of hours or an increase of wages succeeds in enhancing energy, care and sobriety, the output may be greater than before. Especially where fine machinery is used and a high grade of intelligence is required to secure the best results, we often find a true economy in high wages and a lower cost in shorter hours. The relatively cheapest goods which are produced in the United States and which successfully compete in foreign markets with the products of low-priced labor are certain iron and steel manufactures, boots and shoes, clocks and the like, where the wage-scale is notoriously the highest.

Of course it does not follow that every increase of wages or reduction of hours will lower cost. There is at every period and in every industry a limit beyond which the increase of efficiency will be overtaken by the greater outlay, and it is quite possible that there may be no increased efficiency at all. In such cases higher wages do indeed mean greater cost. The mere fact, however, that goods sell at low prices tells us nothing as to the comparative rate of wages in that industry. The cheapness of so-called white goods in a department store may be due to the low-priced labor in the sweat-shops; the cheapness of a Waltham watch may be compatible with the very highest wage-scale. So far as labor is a factor of production, cost depends not merely upon wages, but upon wages as compared with output. Under certain conditions there is a true economy in high wages; the more a workman is paid, the less he may cost.

126. Efficiency of Labor.

Since the ultimate factor in the relation between labor and cost is productive efficiency, the problem of increasing the efficiency of labor is of paramount importance. The older economists were fond of emphasizing the dependence of the demand for labor upon capital. While their analysis was in many respects valuable, they overlooked the independent power of labor to contribute to its own uplifting through an increase of efficiency. It is precisely here that the economic effects of education and leisure as well as of social and political progress mean so much to the community. In the commercial warfare that is being waged between nations to-day, education is recognized as a potent weapon. In the United States the old-time prejudice against the college-trained business man has given way to the recognition of his superiority; technical and commercial schools of all grades are being multiplied, and even the primary and secondary institutions are adapting their curricula more successfully to the needs of the ordinary man. The gist of the negro problem in the South is seen by all careful thinkers to consist in the increase of productive efficiency through an appropriate education of the negro. The hope for the Filipino is to be found in the possibility of training him to habits of orderly and consecutive work. With him, as with the laborer at home, the significance of a higher standard of life — which is only another way of stating the basis of greater productivity — is to be found not only in the domain of distribution and consumption but in that of production. The finer the tool, the greater will be the product; when the tool consists of human energy, we have not only a greater product, but a greater capacity in the human being to utilize the product. The short-sighted employer to-day is concerned only in securing the ostensibly cheapest workman and in driving him to the utmost; the long-sighted employer finds it profitable not only to pay fair wages for moderate hours, but to surround his workmen by an environment of

cleanliness, comfort and attractiveness, with provision for rest, recreation and education. No one who attended the St. Louis Exposition in 1904 could have failed to be struck by the exhibits of the Westinghouse Company of Pittsburg and of the National Cash Register Company of Dayton, with the remarkable arrangements for the welfare of their workpeople. Yet it can scarcely be doubted that it is "good business" on the part of the employers, and that all these seemingly needless and sentimental expenditures really involve a lowering of cost of production through enhanced efficiency of labor.

We thus see the close interrelation between production and civilization. Not only is a lowering of cost the basic condition of increasing wealth and progress, but the physical, moral and intellectual advance of society inevitably reacts upon the individual and renders him a more capable and efficient agent of production. State and church, science and art, have their deep economic significance. Progress is at once a result and a cause. The true reduction of labor cost of permanent importance is that caused by increased efficiency. The more of a man a laborer is, the better tool he becomes. Whatever society does to improve the individual will be more than repaid by an augmented production of wealth.

127. Nature and Advantages of Division of Labor.

In the progress of efficiency perhaps the greatest factor has been the principle of specialization or division of labor. In its deepest aspects it is one side of the biological law discovered by von Baer and elaborated by Herbert Spencer,—the growth of all life from uniformity to multiformity, from an incoherent homogeneity to a coherent heterogeneity. From the economic point of view division of labor may be put into four categories,—the social, the industrial, the technical and the territorial division of labor.

(1) The earliest illustration of the social division of labor is the differentiation of economic function between man and woman. In aboriginal society certain kinds of work were

assigned exclusively to the female. We have seen the influence of women's work upon the evolution of the later economic stages. Even to-day, when all careers are open to women, there is a natural tendency for female labor to concentrate itself in those groups where women possess a peculiar efficiency and where there is the least possible competition with men.

Apart from sex cleavage the earliest example of differentiation of function was through the formation of social classes. At first every one had to fight to secure his food and fight to retain what he had secured. The separation of a permanent military class from the industrial group was a great step in the efficiency of each ; it is not yet found in even so comparatively developed a society as that of the American Indian. The development of a priestly class, again, although of chief importance from the social and religious point of view, had a noteworthy economic effect in that it permitted the industrial class to devote itself more unremittingly to the daily tasks of production without giving so much of its time to the independent propitiation of the malevolent spirits. The priests were in truth a labor-saving device.

It took ages for the originally homogeneous industrial group to split up into great classes. Even after centuries of progress the husbandman's family not only worked up the raw material into roughly finished products, but exchanged superfluities with their neighbors. The cultivator was a handcraftsman and a trader, as he is still in part to-day on the American frontier. An independent class of traders was slowly differentiated, and with the originally greater importance of extra-tribal commerce the traders were usually the aristocrats. It is only where economic conditions were inimical to commerce and engendered the predominance of a land-owning aristocracy as in some of the feudal states of mediæval Europe and Japan, that we find a contemptuous attitude toward trade, and especially toward the small trader, who was often at the same time a petty craftsman. Finally, the artisans are separated from both farmers and traders, and we notice the development

of the industrial class in the narrower sense of the term, as distinguished from the agricultural and commercial classes. With every step in the progress of society we have a further division of labor within each class until we reach the modern bewildering complexity of occupations and professions.

(2) Just as the social division of labor has denoted increased efficiency of each group, so within the sub-groups we find the second form of division of labor, which may be called industrial specialization. In the textile industry, for instance, certain mills manufacture only yarns; others do nothing but weave yarns into cloth; and still others merely dye and finish the product of yarn-spinning and weaving mills. In New England there are shoe factories which make only "uppers" and others which produce nothing but "findings" (counters, shanks and heel-stiffeners). In the glass industry large establishments turn out only one kind of bottle. Some branches have even become so completely specialized that there are factories, as in the bicycle and electrical supply industries, where nothing is done but assemble the parts of a machine or instrument that are made in other establishments. The advantages of this kind of specialization are numerous and obvious.

(3) Thirdly, we find within each particular business enterprise an increasing separation of industrial functions known as the technical division of labor. This is a specialization of process within the same establishment rather than a specialization in different establishments. It may also be declared to be a specialization among workmen in contrast to the industrial division of labor which is a specialization among employers. It is clear that specialization of the workman saves time both in preparation for the trade and in execution of the task, while the greater familiarity with a single process vastly augments his dexterity. It is no less obvious that the greater the specialization the greater will be the chance of the right man falling into the right place, thus facilitating the adaptation of means to end. A trip through any modern factory will disclose tens — nay, even hundreds — of separate processes

designed to turn out a product which in former times was entirely made by a single individual. A good example of such a subdivision of labor, resting still upon human labor force alone, is to be found in the manufacture of ready-made coats, which is now in New York divided into no less than thirty-nine distinct processes.¹

It is, however, in cases where ample technical auxiliaries are used that we find the most minute subdivision of labor. Human energy can then be reduced to the repetition of a single act like a thrust, a pull, a stroke or some other simple manipulation of a machine. The reduction of cost often progresses in a far greater ratio than the increase in the number of processes, for we have here to deal not only with the enhanced dexterity of the workman but with the almost endless succession of labor-saving devices. To make a shoe in some New England factories requires 173 different operations, each conducted by a class of laborers with a special name. The manufacture of a fine watch calls for no less than 1,088 different sets of workmen (not including the operations of furnishing the power), each using a different kind of machine. The saving in cost due to the introduction of machinery can be illustrated in the jewelry and iron business; under the machine method 1,020 gold filigree shells for cuff buttons can be completed in the same time as one by the hand method; in the production of screws where one man can operate from six to twelve machines the ratio of machine to hand

¹ These thirty-nine classes of workmen are: 1. Fitter; 2. Pocket-maker; 3. Canvas-baster; 4. Lapel-padder; 5. Bar-tacker; 6. Seam-presser; 7. Lining-maker; 8. Lining-operator; 9. Sleeve-maker; 10. Lining-presser; 11. Sleeve-presser; 12. Collar-padder; 13. Shaper; 14. Tape-fuller; 15. Lining-baster; 16. Operator; 17. Presser; 18. Edge-cutter; 19. Edge-baster; 20. Shoulder-lining baster; 21. Shoulder-operator; 22. Edge sleeve-baster; 23. Collar-baster; 24. Sleeve-presser; 25. Joiner of collar to lapel; 26. Armhole-baster; 27. Sleeve-sewing operator; 28. Garment-examiner; 29. Collar-finisher; 30. Armhole-lining finisher; 31. Basting-puller; 32. Edge-presser; 33. Buttonhole-cutter; 34. Buttonhole-maker; 35. Hanger-sewer; 36. Presser of entire coat; 37. Button-marker; 38. Button-sewer; 39. Busheller.

product is 4,491 to 1. In the historic example of pin-making, where a single workman unaided could originally turn out only a few pins a day, but where in Adam Smith's time his product was five thousand pins a day, the daily product per workman is now about fifteen millions of pins, complete and stuck in the paper. The tables opposite pages 294 and 295 will illustrate the contrast between hand and machine labor in various occupations in the United States. It is obvious that the technical division of labor is dependent on the existence of a vast market. The mass production, which results from the improvement of technique through division of labor, and the substitution of machine for hand methods, is profitable only when the demand for a cheap product is so elastic as to be susceptible of great increase. Division of labor and increase of output are thus correlated. Each is in turn the result of the other.

(4) Fourthly, the principle may assume the form of localization or territorial division of labor. In large cities we find the most important wholesale houses in any line of business assembled in districts by themselves. In nations we find various industries congregated to a large extent in localities which possess some peculiar advantages, such as proximity to raw materials, water power or markets, favorable climate, cheap labor, and supply of capital or credit facilities. In the world at large the principle of the territorial or geographical division of labor is the chief foundation for the free trade argument. By allowing each section to produce that for which it is best fitted, we shall manifestly secure the greatest and the cheapest production. In all cases, whether we have social, industrial, technical or territorial division of labor, the result is an enhanced efficiency of labor and a proportionate increase of wealth.

128. Defects of Division of Labor.

While the principle of the division of labor is undoubtedly salutary, there are certain dangers which must not be over-

HAND AND MACHINE LABOR.
NUMBER OF HOURS WORKED UNDER EACH METHOD
IN PRODUCING SELECTED UNITS OF MANUFACTURE.

DESCRIPTION OF UNIT.	YEAR PRODUCED.	NUMBER OF HOURS WORKED.	HAND MACHINE
PITCHFORKS 50 PITCHFORKS, 12 INCH TINES	1896	11.83	11.83
	1896	11.83	11.83
PLOW 1 LANDSIDE PLOW, OAK BEAMS AND HANDLES.	1896	3.76	3.76
BAGS 8,000 COTTON FLOUR BACKS.	1870	21.53	21.53
BLANKBOOKS 12 DRAWN LEDGERS, 8 1/4 x 14 1/2 INCHES, 400 PAGES, FULL SHEEP.	1890	11.74	11.74
BOOKBINDING 500 12 MO. BOOKS, 220 PAGES, FULL CLOTH.	1893	16.50	16.50
SHOES 10 PAIRS MEN'S FINE GRADE, CALF, WELT, LACE SHOE, SINGLE SOLES, SOFT BOX TOES.	1895	22.40	22.40
BOXES 1,000 STRAWBOARD, PAPER-COVERED, SHOE BOXES, 11 1/2 x 6 x 4 1/2 INCHES.	1897	14.40	14.40
CRACKERS 1,000 POUNDS GRAHAM CRACKERS, PACKED.	1898	10.00	10.00
CARPET 200 YARDS INGRAIN CARPET, COTTON WARP, WOOL FILLING, 1088 ENDs, 26 PICKS PER INCH. 1 ELLIPTIC SPRING, LEATHER TOP BUGGY,	1890	11.50	11.50
CARRIAGE PIANO BODY, DROPPED AXLES, BANDED HUBS, CLOTH TRIMMING, 10 GOLD HUNTING WATCH	1890	21.74	21.74
WATCH CASES CASES, 18 SIZE, ENGINE TURNED, BARLEYCOAT DESIGN PATTERN.	1890	25.50	25.50
	1897	1.50	1.50
WATCH MOVEMENTS HUNTING WATCH MOVEMENT, 18 SIZE, FULL PLATE.	1892	1.51	1.51
COMBS 1 GROSSE HORN DRESSING COMBS, 7 x 1 1/4 INCHES, COARSE AND FINE TEETH 1 1/2 INCHES.	1845	1.50	1.50
BARRELS 100 FLOUR BARRELS, PATENT HOOPS.	1896	12.48	12.48
ROPE 800 POUNDS 5/8 INCH HEMP BALING ROPE	1875	11.00	11.00
CORSETS 1 DOZEN MEDIUM SATIN CORSETS, 17 EYELETS IN BLACK.	1896	10.60	10.60
HATCHETS 12 DOZEN NO. 2 HINGLING HATCHETS, 22 POUNDS PER DOZEN.	1896	18.95	18.95
FIREARMS 1 DOUBLE BARRELED, BREECH LOADING, HAMMERLESS SHOTGUN.	1899	24.40	24.40
PAMPHLETS PRINTING AND BINDING 4,000 PAMPHLETS, 82 PAGES, 8 1/2 x 5 1/2 INCHES.	1896	0.05	0.05
MAGAZINES FOLDING, STITCHING, AND COVERING 2,000 COPIES 96-PAGE MAGAZINE, 8 1/2 x 5 1/2 INCHES	1862	17.73	17.73
NEWSPAPERS PRINTING AND FOLDING 88,000 PAGES.	1896	11.08	11.08
LITHOGRAPHY PRINTING 1,000 SHEETS ART WORK, 19 x 26 INCHES, 6 COLORS.	1897	2.66	2.66
TYPESETTING 100,000 EMs, NEWSPAPER WORK.	1896	45.45	45.45
ELECTROTYPING 100 ELECTROTYPING PLATES, 5 1/2 x 7 1/2 INCHES.	1895	30.30	30.30
ENGRAVING 1 WOODCUT, 7 1/2 x 9 INCHES, SAME PATTERN UNDER EACH METHOD.	1893	36.00	36.00
ENVELOPES 50,000 NO. 6 1/2 PLAIN WHITE ENVELOPES.	1895	15.78	15.78
BUTTER 50 POUNDS, IN TUBS.	1896	12.50	12.50
1 DOZEN WHITE MUSLIN SHIRTS, PLAITED LINEN SHIRTS BOBOMS, LINEN COVERED COLLARS AND CUFFS ATTACHED.	1897	10.50	10.50
LOUNGES 12 OAK FRAME, ROUND END, PLUSH COVERED LOUNGES, 88 x 28 INCHES, ANTIQUE FINISH.	1890	16.68	16.68
HARNESS 1 BET DOUBLE COACH HARNESS, TRACES 10 STITCHES PER INCH.	1890	41.00	41.00
GRANITE DRESSING 100 SQUARE FEET.	1896	20.72	20.72
	1896	19.00	19.00

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HAND AND MACHINE LABOR.

NUMBER OF HOURS WORKED UNDER EACH METHOD IN PRODUCING SELECTED UNITS.

DESCRIPTION OF UNIT.	YEAR PRODUCED.	NUMBER OF HOURS WORKED.	HAND MACHINE
AGRICULTURE.			
BARLEY 100 BUSHELS.	1839-30 1866-96	218 : 500000000	
CARROTS 10 TONS LONG ORANGE.	1850 1895	1000 : 100000000	
CORN 50 BUSHELS, SHELLED; STALKS, HUSKS, AND BLADES CUT INTO FODDER.	1855 1894	24.30 : 100000000	
CORN 50 BUSHELS, HUSKED; STALKS LEFT IN FIELD.	1855 1894	24.10 : 100000000	
COTTON 500 BUSHELS COTTON, 1,000 POUNDS.	1841 1895	24.00 : 100000000	
HAY HARVESTING AND BALING 8 TONS TIMOTHY.	1860 1894	24.00 : 100000000	
OATS 100 BUSHELS.	1830 1893	24.30 : 100000000	
PEASE 50 BUSHELS.	1856 1895	24.00 : 100000000	
POTATOES 500 BUSHELS.	1866 1895	24.30 : 100000000	
RICE 10,000 POUNDS ROUGH.	1870 1895	24.30 : 100000000	
RYE 100 BUSHELS.	1847-58 1894-95	24.00 : 100000000	
STRAWBERRIES 500 QUARTS.	1871-78 1894-95	24.00 : 100000000	
SWEET POTATOES 50 BUSHELS.	1868 1895	24.00 : 100000000	
TOMATOES 100 BUSHELS.	1870 1895	24.00 : 100000000	
WHEAT 50 BUSHELS.	1859-30 1895-96	24.00 : 100000000	
MINING.			
COAL 50 TONS BITUMINOUS.	1865 1897	24.00 : 100000000	
QUARRYING.			
DRILLING GRANITE 60 2½ INCH HOLES, 1½ FEET DEEP, IN GRANITE ROCK.	1897 1897	24.00 : 100000000	
DRILLING ROCK 6 2 INCH HOLES, 12 FEET DEEP, IN HARD BLUE ROCK,	1896 1896	24.00 : 100000000	
GRANITE QUARRYING 50 CUBIC FEET.	1896 1896	24.00 : 100000000	
LIMESTONE QUARRYING 100 TONS.	1866 1897	24.00 : 100000000	
MARBLE QUARRYING 72 CUBIC FEET.	1876 1896	24.00 : 100000000	
RED ROCK QUARRYING 40 TONS.	1896 1896	24.00 : 100000000	
TRANSPORTATION, Etc.			
LOADING GRAIN TRANSFERRING 6,000 BUSHELS WHEAT FROM STORAGE BINS OR ELEVATORS TO VESSEL.	1853 1896	24.00 : 100000000	
LOADING ORE LOADING 100 TONS IRON ORE ON CARS. TRANSFERRING 200 TONS FROM UNLOADING COAL CANAL BOATS TO BINS 400 FEET DISTANT.	1891 1896	24.00 : 100000000	
UNLOADING COTTON TRANSFERRING 200 BALES FROM VESSEL TO DOCK.	1859 1896 1860 1896	24.00 : 100000000	

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looked. These are the risks involved in specialization of any kind. A great scientist has been described as one who knows something about everything and everything about something. Specialization in such cases is illuminating. Many specialists, however, know a great deal about some one thing and nothing about anything else. Specialization here is narrowing and even dangerous, because it tends to prevent a broad power of successful generalization. In the economic domain this is equally true. In the social division of labor a particular sub-group may pursue its own interests so closely as to subordinate to them the public interest, thus preventing an even and well-rounded economic development. In the territorial division of labor the dependence of a section or country upon one particular product may be perilous in time of some suddenly enforced cessation of production, as in the case of the potato famine in Ireland in the forties, or it may check progress, as in the case of the one-crop system or the sole reliance of a country upon agriculture. In the technical division of labor the confining of the individual workman to the mechanical repetition of a simple act may tend to make him a machine rather than a man, and to stifle and repress all the powers of initiative. This is in fact the one great indictment brought against the modern industrial system.

The danger, however, can be averted. In the social division of labor a developed sense of social solidarity, of business ethics and of political responsibility will insure a continually growing adaptation of the parts to the whole. In the geographical division of labor a sound industrial and commercial programme will, as we shall see, strive for a diversification of industry by supplementing, and within certain limits altering, nature. In the technical division of labor the qualities which lie dormant during the hours of work may be awakened by a judicious admixture of leisure, and by a different attitude toward the work itself, which can be brought about in large measure by technical and industrial education. If machine industry and division of labor simply brought to the workman greater intensity of

work, as the socialists contend, the result would be disastrous. But if, as is often the case, the increased productivity brings with it higher wages and shorter hours, the workman's whole standard of life may be elevated, and his daily task need no longer engross the whole of his physical and mental energy. Under proper leadership within his own ranks and in those of the employers, he may be a part of the machine, and yet not only remain a man but become more of a man than before. The highest grade of American labor to-day is not the cobbler who makes the whole shoe, but the specialist heel-finisher in the New England shoe factory. Under such conditions, as they are disclosed by progress in the most advanced nations, division of labor may be a blessing instead of a curse, and remain an aid to production without becoming a menace to individuality. This result, however, cannot be reached without a struggle to retain the use, while overcoming the misuse, of what is an essentially beneficent principle.

129. Combination of Labor.

Division of labor does not describe the whole of the process. To be effective it must be supplemented by the combination of labor. This also assumes several forms.

(1) First, we have the combination or co-operation of labor with another agent of production, like capital. We have seen that the advantages of the technical division of labor are most signal when machinery is employed. Obviously the larger the quantity of labor that is saved through the aid of capital, the higher will be the productivity of each remaining unit of labor; the more complex the entire process, the simpler will be each single portion. Without the co-operation of the two factors, the division would be less minute and the output less abundant. Modern division of labor is largely the result of the application of capital.

(2) Secondly, we have the technical combination of units of labor with each other. This combination may be successive or simultaneous. In the so-called team system in the clothing

industry, for example, although each set of workmen does its allotted share, it is most important that they all proceed in unison, so that no set completes more or less than can be handled by the next. Here we have successive combination. In a great steel foundry or rolling mill, on the other hand, each detail of the work may be apportioned to a separate class, but unless they all co-operate exactly at the critical moment the product will be worthless. Here we have simultaneous combination. In both cases the combination is effective because of the division of labor; or, better stated, the result is due to the joint efforts of combination and division.

(3) Thirdly, we have the combination due to the fullest utilization, from the outside, of the result of each contribution to the product. In social division of labor this is brought about by the principle of competition or of societary control; in territorial division of labor it is produced by the natural forces of location; in technical division of labor it is effected by the organization of industry. Herein lies the great rôle of the manager and employer of labor,—the entrepreneur in the technical sense. The head of a great department store or of a vast factory is akin to a general. He must be at once bold and prudent, and must look with one eye to the ranks and with the other to the enemy, his competitor. He must be full of resources and of foresight. Above all, he must not only have an army well disciplined down to the smallest detail, but must possess the capacity to take a large view, massing his forces at just the time and in just the manner to be most effective. In short, thorough organization and co-operation are the secrets of industrial as of military success. The great leader is as indispensable in the one career as in the other.

Combination of labor is thus the complement of division of labor. The most efficient use of the one involves the employment of the other. Specialization and co-operation are the obverse and the reverse of the same medal; they are as necessary to a developed economic life as are the individual and

social elements to human life, or the centripetal and centrifugal forces to all life.

130. Supply of Labor.

Since labor is a productive agent that is susceptible of increase, it might seem that the supply of labor will in the long run respond to the demand, so that there will never be a deficiency or a surplus. The situation, however, is by no means so simple, even if we confine our attention to ordinary labor, and abstract from that for which special education or remarkable natural gifts are required.

In the first place, there may be climatic or racial reasons which restrict the supply. In the tropics it is sometimes difficult to induce the natives to work for any consideration. Again, under conditions of forced labor, the source of supply may dry up; the downfall of the Roman empire and the decline of prosperity in the South before the war were due to the fact that cessation of conquests in the one case and the stoppage of the African trade in the other finally made the slave too expensive, by limiting the supply. Even under the modern system of free labor there may be both artificial and natural obstacles. We prohibit Chinese immigration, although by so doing we retard the exploitation of the natural resources of the Pacific slope. We prefer a more equable, even if slow, development to the rapid tempo associated with diminished opportunities to the American workman. A less defensible restriction of supply is seen in the short-sighted policy of some trades-unions which, following the example of the mediæval guilds, seek to secure monopoly returns by interposing all manner of obstacles to membership. Such methods, however, involve a restriction in the supply of special kinds of labor rather than of the general labor force, and invariably react upon the workmen outside of the particular unions. Finally, a natural obstacle to the free adjustment of the supply is seen in the case of the so-called seasonal demand. There are occupations where labor is needed only at stated intervals, as for

instance in farming at harvest or vintage time. Yet the laborer must live during the whole year. Whenever economic conditions do not permit a scale of wages sufficiently high to support the workman during the intervals of non-employment, we find these periodical complaints of scarcity of labor.

On the other hand, a striking example of the relative oversupply of labor is afforded by the substitution of machine for hand labor. The introduction of machinery, however, does not mean a diminution in ultimate demand. For the decrease in cost and price due to machine methods leads to such an enhancement of output that even with a relative falling off in the number of laborers there will ultimately be an increase in the total aggregate of laborers employed. The replacing of the stage-coach by the railway finally led to a vast increase of laborers at higher wages, coupled with a service at lower cost. This result will of course ensue only when the increased profits due to the new machinery are saved and invested in new capital which gives employment to more laborers. If the profits are wasted instead of being saved, new machinery will be of no advantage to the laborer. In point of fact, however, the profits are normally saved. The immediate result is often a temporary oversupply in the particular trade and the discharge of workmen who for the time being, and until they finally drift to the new openings, swell the ranks of the unemployed. One of the most serious problems of the modern industrial system is how to mitigate the evils of this transition period.

In the long run, however, under modern conditions of the free play of economic forces the supply of labor will adjust itself to the demand through changes in the growth of population. The fundamental point here, however, is the rate of remuneration or scale of wages, — a discussion of which must be left to the next book.

CHAPTER XX.

LAND.

131. References.

J. B. Clark, *Distribution* (1899), ch. xiii; R. Mayo-Smith, *Statistics and Economics* (1899), ch. iv; A. Marshall, *Principles* (1898), bk. iv, chs. ii, iii; H. R. Seager, *Introduction* (1904), ch. vi; A. S. Johnson, *Rent in Modern Economic Theory* (Am. Econ. Assoc. Publications, 1902), ch. ii; R. M. Hurd, *Principles of City Land Values* (1903); M. B. Hammond, *The Cotton Industry*, part 1, *The Cotton Culture* (Am. Econ. Assoc. Publications, new series, no. 1, 1897); E. J. Payne, *History of America*, I (1892), 342, 366-384; U. S. Industrial Commission, *Report* (1902), X, and XIX, 46-123.

132. Land as a Separate Factor of Production.

Land is generally distinguished from capital as a separate factor of production. The distinction, however, is sometimes made on insufficient grounds.

(1) It is claimed, for instance, that land is a gift of nature, while capital is a product of labor. It must be remembered, however, that economics has to deal with value, and that from the point of view of value it is difficult to draw so sharp a line. Into many tracts of land there has been put as much labor as into equally valuable concrete products. Without the dykes of Holland and the irrigation works of arid America the land would be worthless. In some garden plots on the European continent the tenant on leaving is permitted to take with him several inches of soil,—the value of the land is as much or as little a product of labor as in the case of other things. It may be contended, however, that the value of urban land at least is not a product of labor. But how about the value of a newspaper, or a banking business? As the country town be-

comes a prosperous city, the newspaper, like the corner plot, becomes more valuable, even though the editor works no harder than before. The circulation increases through the operation of the same social forces which raise the value of the land. There may indeed be more newspapers, but there will also be more corner plots. Even if we attempt to reduce values to the quantities of labor, it is hazardous to distinguish between land and capital on this ground: in a diamond drill, which is assuredly a piece of capital, the overwhelming share of the value may be ascribable to the raw material or gift of nature, and only a small part to labor; in a truck-farm, three-quarters of the value of the land may be found in labor and only a quarter in the gift of nature. In other words, in the value of some land, labor plays a large rôle; and in the value of some capital, nature plays a large rôle. This distinction is hence inadequate.

(2) Again, it is contended that land is indestructible, while capital is perishable. Here, again, the rejoinder may be made that the qualities which give value to the land are not indestructible. It is a commonplace that the chemical ingredients of the soil need to be constantly renewed. The best agricultural land may become the worst, and the worst the best, after a few generations of exploitation or thrift, as the case may be. But surely, it will be said, the qualities of extension or location are indestructible. Even here, however, it must be observed that the two things are not identical. The mere extension of land is indeed indestructible, but it gives no value. All land is alike in extension,—the worthless and the valuable. Location is extension plus situation, just as fertility is extension plus chemical ingredients. Location gives value to land, but location is not indestructible as an economic factor. The land may remain, but the value may change because of an alteration in its contiguity to a market. The land is still there, but the market may disappear, and thus to all intents the economic location of the land suffers a change. Any falling off in demand such as a decrease or shifting of population, a change

in commerce, an alteration in the conditions of transportation, may reduce or wipe out land values. In the deserted mining-towns of the West the value of the land has vanished, perhaps never to return. Value is a product of human relations: nothing human is indestructible.

(3) It is often said that land is fixed in quantity and not reproducible. To this the double answer may be made: some other things are non-reproducible as well, and in the true economic sense land itself is really not fixed in quantity. Reproducibility is a relative term: some things can be easily reproduced; some with difficulty; some, like old coins or works of art, not at all. Furthermore the supply of land can be increased both actually and relatively. There have always been, and still are, vast stretches of unused and worthless land in every country and of comparatively worthless land near every city; whenever it becomes profitable, new areas are put under cultivation or covered with residences. The striking fact of the past century has been the increase in the supply of arable land and the growth of urban areas. Even, however, if all the land in a given county or city is occupied, its economic utilization can be increased, and that is equivalent to a relative growth of supply. More intensive farming in the country or better or higher structures in the city have the same effects as an increase in supply. The limit here, as in all economic goods, is the margin of utilization.

While the differences between land and other things that constitute capital are thus differences in degree rather than in kind, it remains none the less true that land may usefully be put into a separate category. This is due to the fact that an increased supply of other things in general involves a duplication of the thing itself, while the increased supply of land involves a difference in location or fertility. To call this the law of diminishing returns is in one sense inexact, since the law of diminishing returns is applicable to everything that possesses value. The law of diminishing returns, however, has peculiar consequences when applied to land. If an employer

needs more laborers, he can ordinarily secure an increased supply at the same wages, even though there is a certain point beyond which it does not pay him to employ more. If a manufacturer needs additional machines, he can ordinarily buy them at the same price, even though he will buy only up to a certain limit. In fact the progress of society means more machines or more capital at lower cost. But if more land is needed, recourse must be had to less fertile or less well-situated land, which normally means a higher cost. The more intensive farming or the higher structures referred to in the last paragraph amount indeed to an increase in the supply of land, but they also involve an increase of cost.

Economic progress, then, may have different effects on land as compared, not indeed with all other things, but with the great mass of other production goods. The advance of invention and civilization is apt gradually to reduce the prices of manufactured articles, but the increase of output and of civilization may lead to a greater demand for given tracts of land, and therefore to an increase in their price. A moderate tax on ordinary commodities, reproducible at pleasure, tends to decrease their number and thus to increase their price ; a similar tax on the value of land is apt to exert no influence on its existence, and therefore none in increasing its price.

While land thus is a part of capital from the point of view of the laws which explain the nature of rental value in general, and the relation of rental to capital value, land is usefully contrasted with capital if we compare changes in land rents and values with changes in the great mass of other things, the increased production and accumulation of which constitute progress. Because of the social significance of such relative changes, it is legitimate to put land into a separate category.

133. Fertility of Land.

Land has value as a factor in production either because it yields some concrete produce or because it affords a service as the physical support of man. The productivity of land, that

is, the value of its contribution to wealth, depends in either case on two facts,—its fertility and its situation. The fertility is a result of the constituents of the soil combined with its extension; situation is not simply extension, but geographical location. According to the uses to which land is put, we divide it into the categories of pasture, agricultural, forest, mineral and urban land. Each of these is again divisible: pasture land, for instance, into sheep, goat, hog and cattle pasture; agricultural land into meadow and plough (or arable) land with as many sub-classes as there are varieties of crops; forest and mineral lands according to the character of the timber or mineral (including under this designation such non-metallic products as coal and oil); urban land into business, residential, apartment or tenement land.

So far as the element of fertility is concerned, land, like all other forms of wealth, is subject to the law of diminishing returns. A given tract of pasture will support a certain number of cattle, but after a definite limit has been reached each additional head will mean a greater draft upon the resources of the land, with the result that the whole herd will be underfed and either suffer decimation by exhaustion and disease or fetch a lower price in the market. In agricultural land there is at every moment a maximum return from the application of a given amount of labor or capital. In a small and lonely New England farm the best results may come from employing a laborer for every few acres and not utilizing expensive implements; in the far West it may be more profitable to use the costliest machines and to economize in human labor; in a truck farm the application of rich manures may yield the greatest profits. In all cases there is a point beyond which any additional "dose" of capital or labor will give proportionally smaller returns. Under normal conditions of progress the self-interest of the individual farmer may be relied upon to ascertain this point. Under a system of free competition each farmer will seek to secure the largest produce from his land, and the greater the output, the lower will be the price. The

private interest of the producer will thus tend to coincide with the general interest of the community. This is at once the basis and the justification of private property in agricultural land.

In the case of timber land this coincidence between private and public interests is by no means so unqualified. In grazing land the pasture replenishes itself from season to season; in agricultural land the crop follows within a few months, or, as in the case of fruit lands, within a few years of the application of labor or capital. But in forest land the reproduction of the grove takes decades or even centuries. A wise forest policy which endeavors to insure a continuous supply to the public will therefore content itself with felling only the ripe timber. Private interest, on the other hand, which looks to immediate gains may derive more profit from the complete clearing of the forest. When the woods are practically inexhaustible, as in the early period of American civilization, it makes but little difference. But when the forests are denuded to such an extent as not only to cut off the supply of useful woods but seriously to endanger the equable flow of the streams and to threaten, as in Spain, an alternation of complete drouth with devastating inundations, the situation becomes serious. Timber land here can best accomplish the social ends of production through a policy which combines the cutting of the mature trees with the preservation of the forest itself. It is partly for this reason that governments are everywhere retaining or adding to their forest lands, as in the United States with its sixty-four national forest reserves and numerous state parks; while some countries even seek to control the action of private forest owners, in the effort to prevent denudation or to secure reforestation.

In mineral lands the possibility of reproduction is excluded by the very nature of the case. The law of diminishing returns, however, is equally operative, even though its working is apt to be obscured. In some mines it becomes necessary to go deeper for an increased supply, with a resulting rise of cost which finally becomes prohibitive and leads to a complete cessation

of operations. Even where, as in the oil or diamond fields or in some coal or iron mines, the returns seem to be constant from year to year, we are in the presence of diminishing returns, for the source of the returns is itself being slowly consumed. At the end of a given period, be it short or long, not only will the returns abruptly stop, but the possibility of securing any further yield in the future will also have disappeared. As was explained above, we must therefore abstract from each recurring return a sum which when capitalized at the rate of production will ultimately amount to the total original capital and replace the value of the initial stock. Translated into ordinary business language, we must allow for depreciation, — a depreciation which, when continued long enough, will entirely absorb the original capital. The life of the anthracite coal fields in Pennsylvania, for instance, is estimated, on the basis of the present rate of production, at between one and two hundred years; and of the English coal fields at somewhat less. In the case of agricultural land, then, additional doses of capital or labor will yield a relatively smaller produce; in the case of mines or badly managed forests the ostensible produce may be the same, but the real net return on the original unimpaired investment becomes constantly smaller.

Even in the case of urban land the same law applies. The fertility, that is, the productive service, of certain lands consists in yielding support to buildings. It may indeed be profitable to replace a tent by a wooden shanty, a shanty by a stone house, and perhaps even a stone house by a steel skyscraper. Obviously, however, at a given moment there will be a point beyond which a more expensive structure will not yield proportionate returns.

134. Situation or Geographical Location of Land.

The value of all production goods is derived, as we know, from that of the products or consumption goods. Oranges do not sell at higher prices than potatoes because the owner must pay

more for orange lands than for potato lands ; on the contrary, orange lands cost more than potato lands because the oranges that can be grown on an acre sell for a larger sum than the potatoes that can be raised on the same area. Whether the land can be used for oranges rather than potatoes often depends as much on location as on fertility. The most fertile land may be so far removed from the market that, notwithstanding the great potential supply of the produce, the land will be valueless because there is no effective demand for its product. The mutations in value due to changes in situation are in modern times far greater than those due to changes in fertility. The fruitfulness of land is subject to the alternations of weather or chances of nature, but it may on the whole be kept fairly unimpaired with reasonable care, and may be increased up to a certain point by unremitting attention. The economic changes in situation, on the other hand, are often sudden, long-continued and unpredictable. The orange lands in Southern Italy have recently been ruined by the rapid introduction of California fruit into the Eastern market ; the wheat lands of England have suffered greatly during the last half-century by the opening up of vast stretches in the New World. *Per contra*, when the Erie Canal was completed the sections near the terminals appreciated enormously, and we have daily examples of the sudden rise of value in districts newly served by a railroad.

These considerations apply to urban land as well. In the main, and especially when long periods are taken, the value of urban lands grows with the development of the city. Mere agglomeration of population does not involve an increase of land values, if, as in Naples to-day, the growth of population is accompanied by a lessening of business prosperity and therefore by a diminution in the income of the consumer and tenant. But where numbers increase with prosperity, land values naturally rise. The mutations of situation, however, do not always result in an advance. Certain sections in Greater New York are to-day worth less than a few decades ago,

because the tide of business or fashion has ebbed rather than flowed. The introduction of new trolleys or subways has advanced some sites but depreciated others.

It is largely due to the element of situation that different classes of land are within certain limits capable of being transformed into each other. A diamond field can of course not yield a good rice crop, nor can rubber forest land ever be profitably utilized for oats. But pasture land may become wheat land, wheat may be supplanted by garden produce, and truck farms in turn may change into cheap suburban sections and finally into expensive business sites. From this point of view land possesses great mobility. In a certain physical sense land is fixed, while everything else is movable,—and this is the basis of the legal distinction between movables and immovables. But in the economic sense land is mobile, and capital as opposed to land is immobile. A machine can best be used for a particular purpose, and is only rarely serviceable for anything else; a piece of land can often serve any one of a large number of different uses. Any economic fact which brings about a relative change in situation confers mobility upon land.

Since situation is such an important element in productivity, all changes which tend to diminish distance by bringing the producer and consumer together are a mark of progress. The previously existing sources of supply may fall in value, as in the case of the New England farms or the Italian orange groves, but the existing stock of wealth as a whole is increased by the reduction of cost. It is, however, important to remember that so far as the productivity of land is ascribable to situation, its rise in value is more and more due to its increasing contribution to the production of other things than the mere agricultural produce. An industrial enterprise is located in a city for the same reason as a workman or a lawyer: the greater expense of the land for the factory or the home is more than offset by the lower costs in other respects or by the expectation of higher returns. With the growth of industry and population

the productivity of land depends more and more on situation and relatively less on mere fertility.

135. Cultivation of Land.

So far as situation is concerned, the increase of productivity is solely a result of the progressive elimination of the costs of transportation. So far as fertility is concerned, a far larger field of activity is open to human ingenuity. The application of labor to land is its cultivation. Agricultural products are commonly divided into fruits, roots, cereals and leguminous plants. Food-roots and cereal grasses are found in a state of nature, and their cultivation and improvement play somewhat the same rôle in progress as does the domestication of wild animals. There have been five important stages in agricultural development.

(1) The first is the system of migratory agriculture or the shifting of the arable area. This is found at the outset in all countries where land is abundant and where the community is on the point of abandoning the hunting or the pastoral life. A particular plot is tilled for a season or two in the roughest manner, and when the soil begins to show evidences of deterioration the cultivators abandon the land and pass on to a fresh tract, perhaps to return to the first after a long time has intervened and restored its primitive fertility. Where the land is covered with forests, a clearing is made by fire, the ashes fertilizing the ground and the stumps being allowed to remain and rot. Because of this burning process, the system is also called *essartage*. Where the land is near the seashore seaweed, as in the American colonies, is frequently employed as fertilizer.

Migratory agriculture was applied to both roots and cereals. Root culture generally precedes that of cereals, and no real civilization was ever based on root culture alone. In America, for instance, before the advent of the white man, the potato and the manioc gave way to maize, and where, as in Hayti, this was not the case, there was but slight progress. As Payne has

pointed out, cereal agriculture alone, among the forms of food-production, taxes, recompenses and stimulates labor and ingenuity in an equal degree.

(2) The second stage is that of surface tillage or stationary agriculture. As the forests disappear or the supply of free land diminishes, the essartage or migratory system gives way to the more permanent occupation of a given area, and its periodical reduction to a state of tilth. Much of course depends on conditions of climate. In the Old World were found wild culminiferous grasses which made possible the cultivation of wheat, barley, oats, rye, millet and rice. In the New World, although other indigenous grains existed, the wild corn or maize soon became practically the only cultivated cereal. This, together with the fact that no important beasts of burden like the ox or the horse are found in historic times, goes far, as was remarked above, to explain the lower level of civilization reached by the Indians in Mexico or Peru, compared with the natives of Asia and Europe. Where the soil is composed of alluvial deposits or possesses great fertility for other reasons, the natural surface affords so abundant a yield that only very slight manuring is needed to furnish a practically continuous crop. Surface tillage may therefore also be called the one-crop system. When the land retains its fertility with little labor, and where there is a constant demand for the particular product, this one-crop system may persist for a long time.

(3) Usually, however, some form of rest is found to improve the fertility of the land. We thus reach the third stage of what is best called alternating agriculture. That is, there is an alternation of crop and fallow, the same piece of land being cultivated one year, serving as a rough pasture the following year. At any given time, therefore, there are two fields,—one for the crop, one lying fallow. This is hence also called the two-field system. It was soon ascertained, however, that still better results could be attained by extending the alternation to the crops as well, and we thus reach the

three-field system, the same field being devoted the first year to wheat, the second to oats, and lying fallow the third year. This system, which is found throughout mediæval Europe, is also called the open-field or intermixed system, because the land was cultivated in narrow strips, each cultivator possessing one or more strips in different parts of the field, separated from the other strips not by any fence or hedge but only by small ridges or balks.

(4) The fourth stage is reached when a substitute is found for the recurrent fallow or waste. This consists in so increasing the number and variety of the crops, and in such a skilful use of animal and mineral manures, that the fertility of the soil is kept practically constant without any fallow at all. This system is known as that of convertible husbandry, or in its still more developed stages as that of the rotation of crops or diversified farming. It involves the use in turn of cereal and root crops, and especially the application of artificial grasses like clover. In England, where the transition took place in the eighteenth century, it was also called the system of enclosures, because the method of separate strips was abolished, and the whole field was now cultivated in the same way, separated from the adjoining fields by a hedge or fence.

The earlier systems of agriculture involve the use of much land and of comparatively little labor. They are hence called extensive systems. The greater the effort made to secure larger crops by economizing land rather than labor, the nearer we approach the system of intensive farming. When it is found profitable to economize in labor rather than in land through the use of capital in the shape of farm machinery, we reach the most modern form of large-scale agriculture, which is usually termed capitalistic farming, and which will be discussed later. At any given period, however, extensive farming may be more economical than intensive farming.

In the United States we find most of these phases. The period of essartage or forest clearing was soon followed by the surface tillage or one-crop system, which still prevails over

a large part of the South. The open-field system, however, flourished only in very small sections of the East, because the rapid increase in wealth in the North and West rendered profitable the transition on the one hand to large-scale farming and on the other to the more intensive system of crop rotation. With the advance of prosperity the most effective use of the land leads to continual changes. In large sections of the East, for instance, the cultivation of cereals, with the possible exception of corn, has become unprofitable. The less fertile lands have been converted into permanent pasture, and the increase in the average fertility of plough and meadow lands coupled with the growth of forage crops and the use of the silo tends to diminish the relative amount of cultivated land. The process of transition culminates in the dairies and market-gardening farms of the thickly populated communities. Given liberty and intelligence, the farmer may be relied on to choose that form of tillage which is most profitable to him and most productive to the community.

CHAPTER XXI.

CAPITAL.

136. References.

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137. Kinds of Capital.

We have seen that capital in its broadest sense includes everything that has a capital value. The totality of capital is equivalent to the totality of wealth. Capital would then comprise three great categories: (1) consumption capital, or wealth which affords a benefit income, like food, jewels, books in the hand of the consumer; (2) lucrative or acquisitive capital, that is, any form of wealth including relations like the franchise of a corporation or the good-will of a business which gives a money income; (3) production capital, or concrete goods which are utilized to produce more goods. In treating of capital as an agent of production it is with this third aspect that we have to deal. From the point of view of progress, moreover, this is the important aspect, since the first condition

of progress is the increase of the concrete goods that constitute wealth.

Capital in this sense can be further classified into land and other capital. If capital be regarded as either consumption or lucrative capital, there is no need for such a distinction. Whether a man enjoys an estate or a painting is immaterial,—neither can perhaps be duplicated as consumption capital. Whether he applies a fund of a given amount to the purchase of a farm or a share of stock is again immaterial, so far as each represents so much lucrative capital. But as an agent of production, land, as we have seen, stands in a relation socially so peculiar to the producer, and is moreover of such paramount importance when compared to any other single category of concrete goods, that it is best discussed by itself.

Capital as an agent of production is sometimes classified as fixed and circulating capital. The original distinction of Adam Smith was that circulating capital comprised goods from which profits could be derived only by their circulating from hand to hand, like finished products, while fixed capital was that which, like a house, yielded a revenue without changing hands or circulating any further. As a matter of fact, however, the only kind of capital which circulates indefinitely is money; in other cases, as when a product goes direct to the consumer, there may be only one change of hands. The great aim of modern enterprise, in fact, is to reduce the circulation to the narrowest limits.

Another way of explaining the distinction is to say that fixed capital comprises such things as can be used repeatedly for productive purposes without suffering much change; and that circulating capital consists of things the single use of which would convert them from the category of production goods into that of consumption goods. A machine would be fixed capital; the leather just before being converted into the shoe would be circulating capital. This is virtually the distinction between durable and perishable wealth. It is also sometimes expressed as a distinction between active and passive forms

of capital, the active capital being the fixed capital which, like the machine, makes the impression, the passive capital being the circulating capital, which, like the leather, receives the impression. This nomenclature is less happy in that it obscures the fact that all forms of productive capital co-operate with each other, and in this sense are really active.

Another classification of capital is that according to the uses to which it can be put, as agricultural, commercial, industrial and financial capital.

(1) By agricultural capital, strictly speaking, is meant something different from land or landed capital. Agricultural capital is not land, but the things applied to the land ; land or landed capital is the ground itself. When we speak of a man putting his capital into land, we mean that he invests in a piece of land ; when we say that he applies capital to land, we mean that he spends his money on better farming tools or machines, manures, drains or beasts of burden. In the former case we would have land or landed capital ; in the latter we have agricultural capital. This distinction, however, is frequently not observed.

(2) When the concrete pieces of capital take the form of ships, docks, warehouses or media of internal commerce, we speak of commercial capital. When capital is applied to the processes of industry in the narrower sense, we speak of industrial capital. From one point of view the same object may be regarded in turn as industrial, commercial or agricultural capital. A cart may be constructed in a factory and then used in the industrial operations of another factory ; it may be employed by a merchant, and may finally be sold to a farmer for use on the farm, serving in turn as industrial, commercial and agricultural capital. The characteristic feature of modern life is the increasing importance of industrial capital.

(3) By financial capital is meant not so much the concrete objects as the fund or money embodiment of the agents used in financing or rendering possible economic enterprises. The surplus from any economic activity may be stored up in the

shape of jewelry or of coins ; and this surplus wealth is the financial capital which may at any moment be devoted to productive enterprise. In modern times the surplus is put not only into money, but into all kinds of paper and credit representatives. Financial capital on a large scale has been in turn a handmaid to each form of economic activity. In the later days of classic Rome financial capital was closely connected with land, the slaves being the important form of capital. In the developed economy of the Orient, as well as in the later middle ages, financial capital was intimately related to commerce ; the bankers were the merchant princes. In modern times financial capital is more and more associated with industry : the "industrials" are fast gaining even on the railway or banking securities. Modern capital is predominantly industrial capital.

138. Function of Capital.

The aim of all economic activity is to secure a surplus by augmenting utilities and diminishing costs. Production affects surplus in both ways,— it increases the stock of economic goods, or decreases the cost. Sometimes it accomplishes both results. Capital as an agent of production is an efficient help in this process.

The productivity of capital consists in the aid which it renders in securing the same results with less effort. It is an adjunct to human labor, and to that extent lessens labor by interposing something between labor and its result. The function of capital might therefore be called the roundabout method of production. If we need water, we can go to the stream each time and bring the water in our hand, or we can devote some of our labor to constructing a pump. While we are making the pump we are losing time and energy, but when it is finished there will soon be an appreciable net saving or surplus of utility over cost. Instead of applying our labor directly to the stream we interpose the piece of capital known as a pump. The pump not only pays for itself, but leaves a

surplus, which can now be transmuted into further wealth. Capital, then, is productive in the same sense as labor. It is not indeed the cause of value any more than labor is the cause of value. But when labor brings about an increased net surplus of utility, we call it productive ; and when capital does the same, it also is productive. If the pump does not work, that is, does not increase the surplus, it will have no value, neither rental value nor capital value ; and since it has no capital value it will not form a part of the aggregate of things which are represented by the fund of capital. But if it does work, that is, if it is really capital, it is productive because it produces a net surplus over and above what would have been produced by unaided labor.

The statement that capital works through the roundabout method of production is, however, liable to misunderstanding. In one sense indeed the interposition of capital lengthens the period of production. In former days the cobbler made the shoe or the blacksmith the chain, and turned it over almost at once to the consumer ; nowadays a long period intervenes between starting the manufacture of a particular shoe or chain and its final delivery to the consumer. The process of the successive combination and division of labor has been brought to its highest efficiency by the employment of capital. Capital is needed for securing the raw material in large quantities, for providing the factory or mill and the machinery, for the payment of the various classes of laborers, for the warehousing of the product and for its distribution to the retailer. The greater the participation of capital, the more roundabout is the process.

On the other hand, a single process or a definite part of a process can obviously be finished far more rapidly by a machine. The substitution of capital for labor, that is, the replacement of a hand by a machine, means the cutting down of the time of technical production. We thus seem to face the dilemma that capital saves time and loses time, that it shortens the period of the particular process and yet lengthens the period of the entire process.

The reconciliation is simple. The individual machine saves time, but to create the machine takes time, so that the whole process, counting from the beginning is lengthened. The machine is productive because it turns out so much more in quantity that the value of the entire product soon yields a surplus over the expenditure of energy put into the machine. That is, from the point of view of aggregate mass production there is a saving of time, measured in terms of cost; from the point of view of the single product there is a sacrifice of time, which is more than offset by the fact that the single product is now only an insignificant unit in the mass. The value of the unit is a proportionate part of the mass.

In another sense, finally, the ascription of the roundabout process to capital may be reversed. If we regard not the particular piece of capital, but the fund of capital in general, we may, on the contrary, say that capital brings labor and consumption together. In a large shoe factory, for instance, it takes time to make each shoe; but at any given moment the raw material is coming in at one end and the shoe is finished at the other end. Formerly the cobbler made one shoe and then began on another; now at the same instant shoes are begun and shoes are finished. The function of capital as a productive fund is therefore really to synchronize labor and consumption. The individual pieces of capital separate labor and consumption; the fund of capital brings them together. They are two aspects of the same thing, just as division of labor and combination of labor, seemingly the opposites, are, as we know, really two sides of the same process. To give a familiar illustration, it is like the reservoir of water used to run a mill; the individual drops come in at one end and go out at the other, but the water remains at the same level and exerts its force as a mass of united drops. The individual pieces of capital form the final enjoyment; capital as a whole permanently invested unites them. In one sense capital involves a roundabout or individual process; in another sense it implies the most direct of processes.

139. Creation and Growth of Capital.

The root idea in the conception of capital is that of a surplus. In order for anything to have a capital value there must be a surplus of inchoate uses. If the fibre in an electric light bulb wears out, the bulb possesses no further reserve uses and loses its capital value. Again, if we labor simply to provide for our fleeting wants and consume all that we produce, there remains at the close of each production period no surplus. The surplus energy which is transmuted into pieces of capital therefore comes ultimately from the decision of the individual to postpone present gratifications. If instead of taking the water directly from the stream we elect to spend our time in constructing a pump, we are creating a piece of capital. The only way in which capital can be formed is at bottom by saving, by waiting, by forbearing.

The creation of new capital is therefore the result of prudence and forethought. The habit of saving, that is, of subordinating the present to the future, is an essential characteristic of progress. Primitive peoples are spendthrift, — they have no thought of the morrow and lay by nothing. There is no accumulation of capital. Where the provision of immediate needs occupies the whole of one's time, there is no opportunity of developing those higher qualities that make for civilization. The formation of a continually growing surplus involves the saving of energy and the liberation of human efforts from the pressing needs of mere material existence. The growth of capital means the advance of civilization, because it implies more efficient labor, the growth of leisure and the freedom to turn attention to the scientific, æsthetic and ethical aims of life. The destruction of capital, as in the later days of the Roman empire, spells a decay of civilization, because with the weakening of the economic foundation the whole superstructure is bound to fall. The growth of capital is in itself indeed not sufficient to engender the highest form of civilization, but it is a fundamental prerequisite. Not all wealthy communities

have been civilized in the best sense, but there has never been great art, great literature, or great science except when there has been an abundance of capital.

To say that capital is the result of saving or forbearance does not necessarily imply any moral approbation of the owner of capital. It is for this reason that it is unwise to speak, as many do, of abstinence or sacrifice as the cause of capital growth. A man who already possesses an income large enough to satisfy his daily wants, be they great or small, cannot do anything else with his surplus except to save it, and thus lead to the formation of fresh capital. If he is a maniac, he can of course physically destroy it or the money represented by it; and if he is a fool, he can put the capital to such stupid and unproductive uses that it will soon become worthless and disappear as an embodiment of value. But unless he wastes capital in these crude ways, he cannot help saving. He does not abstain from any present gratification, because this capital is a surplus above all present gratifications. Abstinence here means abstinence from senseless waste; it is a negative, not a positive, merit. Nor does he sacrifice anything. As we shall see later in discussing the question of interest, the problem is one of marginal forbearance, that is, of sacrifice at the margin where he must choose between consumption and saving. The richer a man is, the more remote is the margin where he will have to decide. The saving of one dollar means something very different to a millionaire and to a day laborer. The essential point to remember is that capital is a surplus, and that the stock of capital can be augmented only by an excess of production over consumption. The excess can be formed only by forbearance or postponement, but the forbearance is based on the expectation of increased income. There is no ethical merit attaching to the individual, although the social consequences are advantageous.

It might be objected, finally, that if we buy a railway share or a piece of land which doubles in value during the year, there is an increase of capital without any waiting. In reality, how-

ever, the share rises in value because it represents an increased earning capacity, owing to the fact that the railway is now doing more business, that is, adding more value to the commodities it transports, or, in other words, creating surplus wealth. If the corporation elected to waste the surplus by squandering it in extravagant salaries or palatial private cars there would be no excess available for dividends, and no rise in the price of the security. In the same way the increase in the value of the land means that there are more individuals who have accumulated capital and who either need the land themselves or employ the other human beings that are thus enabled to pay for the use of the land. In every case the increase of capital, that is, the creation of fresh capital or capital value, implies an increased productivity, or a surplus somewhere. Whether the individual owner of capital is always entitled to the particular surplus is quite another question.

Capital, then, is the available stock of existing wealth. If a part of this stock is consumed and not replaced, capital is diminished; if it is not only replaced, but so used as to bring about an increase, this surplus is the new capital. The only way to increase capital is to refrain from the waste or immediate consumption of product. The greater the existing stock of capital, the easier is it for the individual or the community to make this election. The increase of capital is therefore in last resort due to the growth of intelligence. Where science gives an increasing mastery over nature, the problem of production through the growth of capital resolves itself into the intelligent selection of such things as are wanted by society, that is, to the formation of a constantly growing surplus of wealth.

140. Nature and Influence of Capital.

Capital, as a socially important factor, is to-day, as we have seen, industrial capital. Ours is called the capitalist age, not because capital was unknown before, but because industry is permeated through and through with capitalist qualities. Capi-

tal on a small scale, consisting of a little surplus, was devoted to production almost from the beginning of civilization. Capital on a large scale was amassed in the agricultural and commercial enterprises of antiquity. Under the economic conditions which made for slavery and handicrafts, however, there was no opportunity to employ capital on a large scale in industry; and with the decreasing profitability of slavery and the gradual restriction of the commercial frontier, as in later Rome, capital itself began to dwindle until the whole economic and political structure collapsed.

After many centuries, capital was again accumulated, first out of the surplus of mediæval agriculture, and then at a more rapid rate out of the profits of the new commerce. The opening up of the world market in the eighteenth century made possible the application of this surplus to industry. From that time begins the prodigious increase of capital which characterizes modern life. Now for the first time the real productive force of capital is realized. The surface of the earth is a fixed quantity; a commerce based on agriculture and the products of hand labor can never transcend certain well-defined bounds. But the multiplication of commodities into the value of which the raw materials enter as a minor factor is limited only by our failure to unlock the mysteries of nature. Modern science, modern technique, modern capital, are enabling us to explore the innermost recesses of this unknown world and to convert it to industrial uses.

Modern capital is therefore primarily industrial capital, and since the factory is the type of modern industry, the capitalist system may be called the factory system. There is indeed also a capitalist agriculture, but the characteristic features of this are borrowed from capitalist industry. Industrial capital may be taken as the type.

The factory system is sometimes called the machine system. This is not strictly correct. In a modern chemical factory, for instance, there may be few or no machines at all. What must always be present, however, in a factory is some form of auto-

matic action, replacing hand labor, whether that action is due to forces of nature operating directly upon raw materials, or indirectly through the medium of a machine. For all practical purposes, however, the machine may be regarded as the type.

Industrial capital in this sense discloses three characteristics, — mass production, uniformity and interchangeability.

(1) Capital becomes profitable only when there is a mass production. The supersession of hand by machine labor involves such an enormous multiplication of output that the product must now be sold *en masse*. The cotton print will ultimately go to the individual consumer, but the factory owner must count upon the wholesaler taking his entire product of a day, a week or a season. Even if the factory owner retails the goods, as for instance with the Tobacco Trust or certain shoe-dealers, he must control enough shops to take his whole output.

(2) Industrial capital implies uniformity of production. Hand labor gives free rein to the individuality of the producer; each pair of shoes the cobbler turns out may differ in some respect from its predecessor, and may be prized on that account. A machine turns out the same thing day after day, and the advantages of specialization and co-operation are derived chiefly from this continual repetition. Things are made according to fixed types, forms or standards. Hence there is sometimes used the term standardization of industry. What is meant is the uniformity, — the uniform repetition and production of the same type. Great as has been the ingenuity expended in differentiating machinery, the result has been only a moderate multiplication of types, but little differentiation of the individual products within each type. There are indeed different kinds of hats and keys, but one Knox hat is almost like another, and one Yale key almost like its thousands of fellows.

(3) Industrial capital also denotes interchangeability. Capitalist division of labor means that all complex products are

made in minute portions. Through the very fact of uniformity, one unit is as good as another of the same class, and may be used interchangeably. If some particular thing breaks in a bicycle or a locomotive, it can be duplicated at once and at a minimum of cost. The system of interchangeable parts is applied to-day even to such products as vast bridges and colossal steamers. Interchangeability is a corollary of uniformity and of mass production.¹

The deeper social influence of capital is visible in these characteristics. Modern life means greater uniformity. We dress alike, we eat alike, we speak alike, we think alike. Through capital we are becoming citizens of the world. Old prejudices are destroyed at every turn, religious and racial antipathies diminish, local and even national boundaries are overstepped. Side by side with these advantages appear the dangers. The levelling is undoubted, but if not carefully guarded against it may become a levelling down instead of up. Uniformity is preferable to eccentricity and vagaries, but a uniformity of mediocrity is to be deprecated. The real hope and strength of the factory system are that industrial capital will so reduce cost and increase the surplus of the individual as to enable him to devote it to the higher ends which make for progress.

141. Investment of Capital

When we speak of the investment or application of capital, we mean in last resort the utilization of the concrete things that constitute capital. These concrete things will be used by the alert entrepreneur only as long as they yield the maximum returns; whenever something new promises better results, it will be forthwith substituted. Perhaps the most striking fact in the incipient lawsuit of a few years ago between the great iron-

¹ This is explained in all its details in the Tenth Census *Report on Power and Machinery* by Professor Trowbridge, who classifies machine tools into those acting by compression, shearing, paring, milling, abrading, grinding and sawing.

masters, Carnegie and Frick, was the revelation of the readiness with which the former threw into the scrap heap machinery almost new, costing millions, as soon as a notable improvement had been perfected. This seeming destruction of capital on an immense scale was in reality an increase, profitable alike to the producer and the public. All physical investment of capital is the application of new commodities to replace the old. The old need not be actually worn out; it is sufficient that it should have lost its relative productivity.

Under modern business conditions the investment of capital is put back a stage, and becomes the financial investment, which renders possible the ultimate physical utilization. Capital is invested as a fund, to be later transmuted into concrete things. Herein lies the significance of the modern corporation. Through the medium of corporate securities a fund of capital is made mobile and active. The purchase by the public of a new industrial security means, if the enterprise is honestly and ably financed, that the proceeds will ultimately take the shape of plant or working capital, that is, of realized earning capacity. The function of the promoter, the banker and the underwriting syndicate is at bottom legitimate and productive. If the physical investment of capital is desirable, the financial machinery through which this end is attained is similarly productive. It often requires far more ability to raise the necessary funds at the lowest rate than to turn out the finished product at the lowest cost. Both investor and consumer may in the end derive more benefit from the successful financial "deal" than from the best technical operation of the industry. The control of modern finance over vast masses of capital indeed makes possible its manipulation for illegitimate ends on a gigantic scale. But these abuses must not blind us to the essentially productive character of the services of the financiers as the intermediaries between financial and industrial capital.

Since the ownership of the concrete pieces of capital is coming more and more to be represented by these corporate

securities, their character becomes of considerable importance. Technically they are divisible into stocks and bonds. The share of stock represents legally the proportionate part of ownership in the corporate property or assets. When there are no bonds, the stock is entitled to all the profits. Sometimes the stock is divided into preferred and common shares, and occasionally we find a further variety known as cumulative stock, so called because the dividends are allowed to accumulate to a certain amount before becoming payable. Opposed to the stock is the bond; the property of the corporation is mortgaged to the bondholders, who receive interest on the bond until the expiration of the mortgage. If there is any default in the interest, the property covered by the mortgage can be sold to satisfy the debt. In England, where mortgage bonds are unknown, their place is taken by the debenture stock, the difference being that the holder has the right, in case of default, to reimburse himself by levying upon some item of the company's property. Bonds are first, second, third or further mortgage bonds according to the priority of the lien. Where a rate of interest is contingent upon earnings, the bond is an income bond. Sometimes the bonds are convertible into stock, and hence called convertible bonds. When smaller corporations are merged into a larger one or when a corporation seeks to avoid mortgaging its own property, the original bonds are put in trust as collateral, and a new issue is made under the name of collateral trust bonds or simply trust bonds. Although such an issue is not legally a mortgage, it is so practically, since recourse can always be had through foreclosure to the underlying mortgage securities.

In legal theory the stock represents the ownership, and the bond a limited interest in the enterprise. In actual fact, under recent financial development, where the original cost or outlay is often defrayed out of the proceeds of the mortgage indebtedness, the stock has come to represent the speculative interest in the venture, while the bond represents the actual proprietor-

ship. This economic reversal of the legal situation is most clearly marked in the railways, but is also visible in ordinary industrial enterprises. As a consequence there has frequently developed an antagonism of interest, not only between bondholder and stockholder, but also between the main body of investors and the directorate. In some States the issue of bonds is restricted to a proportion of the stock or of the property, or otherwise limited ; in other cases the bondholders are given voting power ; in still other instances the principle of minority representation is introduced to safeguard the interests of the stockholders. The English law of 1900 and the recent Massachusetts law are perhaps the most advanced examples of Anglo-Saxon legislation to protect the varying interests of different classes of investors.

The proper method of managing the investment in vast corporate enterprises has assumed such importance that it has well-nigh become a separate discipline, under the name of corporate finance. It includes such topics as accounting, the issue and marketing of securities, the funding policy, the accumulation of surplus and reserves, and many more. In a comprehensive treatise on economics these would all need explanation. They must here be passed over with a mere mention. The influence of the proper investment of capital is by no means confined to the investor. Primarily indeed he seems to be affected. He must, however, be regarded as the channel through which society as a whole increases its fund of capital and its resulting control of nature. The investor, as opposed to the reckless speculator, is as effectively an agent of society as any individual producer. The one, like the other, may think that he is pursuing his own interest, but he will generally also be subserving the common interest. If the producer turns out something that the community really wants, he will benefit society as well as himself ; if the investor exercises sagacity in the application and control of his investment, he will tend to save the community the risk of misdirected energy and the wastes of failure.

The proper financial control of the fund of capital is no less important than the proper application of the concrete pieces of capital to industry, trade or agriculture. Upon the economic investment of capital, in the broadest sense, depends in large measure the prosperity of all classes.

CHAPTER XXII.

ENTERPRISE—THE CONCENTRATION OF PRODUCTION.

142. References.

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143. The Meaning of Concentration.

Enterprise is in one sense, as we have seen (§ 121), a species of labor. In reality, however, it has come to mean that kind of labor which is carried on independently instead of for a stipulated reward. Strictly speaking, it is not identical with management, for the manager of a business may be hired at a definite salary. Enterprise is management plus risk ; that is, it involves the independent conduct of a business, with all the

chances of profit or loss. We have already discussed the historical forms of enterprise (Chap. VI). In modern times the pre-eminent fact of business enterprise is the tendency to concentration. A study of modern business enterprise thus becomes virtually a study of concentration.

In approaching the problem of concentration, we must distinguish between the concentration of wealth, the concentration of production and the monopoly of production. Concentration of wealth is essentially an individual phenomenon in the sense that any one may acquire wealth from independent and relatively insignificant sources. A rich landlord may own a large number of small tracts; a wealthy capitalist may secure his returns from many investments in minor enterprises. Concentration of production, on the other hand, means either that the units themselves are increasing in size as in the case of larger farms or factories, or that they are combined with other units under more or less centralized management, as in the case of enterprises technically separate, but subject to the same financial control. Where an individual owns the productive factors, concentrated production involves concentrated wealth; where the business enterprise assumes a corporate form, concentrated production is compatible with a diffusion of wealth among the security holders.

Concentration of production, again, is not necessarily a monopoly of production. The size of the units may increase, but there may still be rivalry between them. Bonanza farms, department stores and great corporations, each representing an undoubted concentration of production, may yet suffer keen competition from their rivals. It is only when concentration has reached the stage where a single business enterprise permanently supplies so large a percentage of the entire output as to control the price that we can speak of a virtual monopoly. In such a case indeed there may be technical competitors, but the competition is practically inoperative.

Concentration of production may be predicated of each of the three factors,—labor, land and capital.

(1) The concentration of labor as an independent phenomenon is not important. After a certain low limit of co-operation has been reached the profitableness of an increased force of laborers depends on the acquisition of more land or the utilization of more capital. Not only must wages be advanced, but the output must be disposed of. For these and similar purposes capital is required. Concentration of labor is thus dependent upon concentration of land or of capital.

(2) Concentration of land varies with the kind of land. In grazing and agricultural land, modern economic forces, as we shall see (§ 145) are opposed to concentration; so far as it exists, it rests upon the application of capital to land. In mineral and forest lands, when we observe a tendency toward concentration it will often be found that as in the case of iron, coal and copper, the product forms an important raw material for closely related industries, and that the land concentration is a result of the industrial concentration. Finally, in urban lands, whether the sites are owned in large or in small plots has no bearing on the price. Thus, while the concentration of land may be important in distribution, it is as a factor in production either non-existent, insignificant or dependent on that of capital.

(3) Concentration of production hence resolves itself into concentration of capital as the dominating force. Of this, again, there are two categories, — large-scale production in the narrower sense and capitalist consolidation and integration in the wider sense. Large-scale production is the result of the change in the normal business unit brought about directly by modern machinery. Capitalist consolidation and integration are the result of the more important changes effected by the application of great masses of financial capital to industry and commerce in general. Each of these must be considered in turn.

144. Large-Scale Production.

Large-scale production might also be called the concentration of employment. It means that the business unit, whether a manufacturing establishment, a commercial enterprise or a farm,

employs a large amount of capital, and as a consequence in some cases also a large amount of labor or land. The ordinary example is that of the modern factory contrasted with the shop or handicraft system of former times. We find isolated instances of large-scale industrial production in earlier ages, but with the advent of machinery it has become the type instead of the exception. Beginning in the textile industries in England at the close of the eighteenth century, it soon spread to the most important trades, although there still exist to-day industries in which an unequal contest is being waged between the domestic and the factory systems. On the European continent the transition came somewhat later, and in Germany to-day the so-called petty industry (*Kleinbetrieb*) still makes a respectable showing. In the United States, although we find a beginning of large-scale industry in the textiles after the war of 1812, it was not until after 1850 that the transition from the hand trades assumed any importance, and not until after the civil war that the tendency toward concentration into large establishments became very marked.

The distinction between small-scale and large-scale production is not precisely equivalent to that between hand trades and manufactures. The building trades are generally put in the former category, and yet they are often conducted on a large scale. On the other hand the factory may be a small one. Out of 512,254 establishments reported in the Twelfth Census, 215,814 represented hand trades. In 32,382 of these from 5 to 20 persons and in 7,773 over 20 persons were employed. On the other hand, out of 296,440 establishments, in about one-seventh (41,687) the proprietor was the only workman, and in about one-half of the remainder (125,890) the number of employees was under 5. Nevertheless large-scale production may be declared to be virtually the result of the factory system with its use of machinery, its mass production and its standardization. In most of the hand trades, like carpentry, plumbing, custom tailoring and custom boot-making, we have a small-scale production; while the building trades

which form the chief exception are nowadays, through the use of machinery, the purchase *en masse* of raw materials, and the employment of large capitals and great numbers of workmen, in reality more akin to the factory system. While many small factories are still being continually started, the tide is setting strongly toward an increase in the size of the unit.

In the United States the maximum number of manufacturing establishments in many branches was reached in 1870; since that time the number has been in some cases actually diminished, while in all cases the average capital invested, the number of employees and the value of the product per unit have steadily risen. The following table illustrates the great increase of large-scale production:

Industries.	Number of Establishments.		Capital.		Average per Establishment.			
					Number of Workmen.		Value of Product.	
	1870.	1900.	1870.	1900.	1870.	1900.	1870.	1900.
Iron and Steel . .	726	668	\$161,523	\$858,371	103	133	\$274,878	\$1,203,545
Agricultural Implements . .	2,076	715	16,780	220,571	12	65	25,080	141,549
Carpets and Rugs	215	133	58,329	334,205	56	214	101,217	362,349
Woollen Goods .	2,891	1,035	34,184	120,180	28	67	53,755	114,425
Leather	7,569	1,306	8,076	131,214	5	40	20,774	156,231

This method of presentation of averages fails to show the real significance of the change, as it includes the small as well as the large factories. If, however, the number of workmen is taken as an evidence of concentration, it appears that a little over eight per cent of all the factories reporting employ about seventy-five per cent of the total number of workmen. In a single iron and steel mill in Ohio there were 7,477 employees; in a cotton mill in New Hampshire, 7,268; in an agricultural implement factory in Illinois, 6,728; in an electrical supply factory in Pennsylvania, 6,318 workmen. Moreover, as appears from the preceding table, the investment of capital and the value of the output increase far more rapidly than the number of workmen. The head of a steel company in Pitts-

burg recently testified that in order to construct, equip and manage a steel plant there is needed an investment of from twenty to thirty millions of dollars.

145. Large-Scale Agriculture.

Where agriculture depends chiefly on the labor of the farmer, aided by comparatively primitive implements, the size limit of profitable farming is soon reached. In the middle ages, even with co-operative or communal farming, the prevalence of the three-field system restricted the size of individual strips. In more modern times we find either the small plots of the European peasant proprietor or the somewhat larger tracts of fresher land of the early American farmer.

Farming on a large scale becomes possible only when capitalist methods are employed. In former times these methods were supplied by slavery, as in the *latifundia* of later republican Rome and in the *ante-bellum* plantation in the South. The slave, however, was to all intents and purposes a species of capital or machinery — even though a human machine. When slavery disappeared, a new era of small farms was ushered in, and whatever tendency to large-scale farming is found to-day is due in great measure to the application of industrial capital in the shape of farm machinery and capitalist methods of transportation.

The home of farm machinery is in the United States. Its coming was somewhat later than in the case of the other more important productive enterprises. Whitney's cotton gin and Newbold's cast-iron plough were invented at the close of the eighteenth century, but it is only since the civil war that farm machinery has been used on a large scale. The increase in the production of agricultural implements in the United States is illustrated by the following figures: 1850, \$6,842,611; 1860, \$20,831,904; 1890, \$81,271,651; 1900, \$101,207,428.

In the large farms of the far West fifty-horse-power traction engines are now used to pull at one season a train of great ploughs, harrows and press drills for planting, and at another

immense harvesting-machines, automatic rakers and threshers. In the Central states we find check-row planters, riding-ploughs, steam corn huskers and shellers, mowing-machines, potato planters and diggers, manure-spreaders, feed-choppers and grinders and ditch-digging machines — to mention only a few of the newer implements. The saving of labor, the prodigious increase of output and the lessening of cost go far to explain the competition of American farm products in the European markets, despite the great obstacle of distance.

The influence of machinery in increasing wages, shortening hours of work, lightening the tasks of women and children and raising the general standard of life of the farmer as well as of his hands is so universally recognized that it needs no statistical proof or explanation. What interests us here is its effect upon the size of farms.

It is obvious that considered by itself expensive machinery becomes profitable only when applied to large stretches of land. This is evident from the following table giving the average number of acres of improved land per farm :

	1850.	1860.	1870.	1880.	1890.	1900.
United States	78.0	79.8	71.0	71.0	78.3	72.3
North Atlantic Division	69.3	69.0	68.3	66.6	64.3	57.4
South Atlantic Division	120.9	115.6	80.7	56.1	55.6	47.9
North Central Division	61.0	67.7	69.7	80.6	95.8	101.2
South Central Division	82.6	89.7	60.8	56.2	61.0	48.3
Western Division . . :	51.8	106.4	168.1	185.9	157.8	111.8

In the North Central division, the chief home of farm machinery, the increase is marked. The average for the whole country, however, is kept down by two facts. First, in the Southern states machines outside of the cotton gin have hitherto been found well-nigh inapplicable, and the old slave plantations have been gradually broken up. Secondly and more important, land values tend to rise with growing prosperity.

A given capital thus represents a constantly diminishing acreage, and it becomes increasingly profitable to apply more labor and minor machines to small areas rather than large capital and vast machines to great areas. That is, we have a tendency to more intensive rather than large-scale farming. The final consequence is a resultant between the two forces of growing productivity of machinery and the increase of land values.

The following table gives the average size of the entire farm in acres :

	1850.	1860.	1870.	1880.	1890.	1900.
United States	202.6	199.2	153.3	133.7	136.5	146.6
North Atlantic Division	112.6	108.1	104.3	97.7	95.3	96.5
South Atlantic Division	376.4	352.8	241.1	157.4	133.6	108.4
North Central Division	143.3	139.7	123.7	121.9	133.4	144.5
South Central Division	291.0	321.3	194.4	150.6	144.0	155.4
Western Division . .	694.9	366.9	336.4	312.9	324.1	386.1

It will be observed that up to 1880 there was a movement toward smaller farms. Since 1880, the era of the introduction of machinery on a large scale, the forces have about balanced each other in the North Atlantic and South Central divisions, while in the South Atlantic division the tendency just referred to has been progressing, even though during the past few years there seems to be a new and slight movement toward the so-called plantation system, or large farm with white owner and extensive gangs of negro farm hands. In both the North Central and Western divisions not only has the use of machinery increased, but the opening up of vast stretches of grazing land has contributed to increase the average size of the farms. With the growing importance of land values the trend in the West may be expected soon to conform to that in the East. In 1900 over 82 per cent of all the farms were under 175 acres. The tendency for the small farms to increase is shown by the following table of percentage in acres :

	Under 10.	10-20.	20-50.	50-100.	100-500.	500-1000.	1000 and over.
1880	3.5	7.1	19.5	25.8	42.3	1.9	0.7
1890	3.3	5.8	19.8	24.6	44.0	1.9	0.7
1900	4.7	6.3	21.9	23.8	39.9	1.8	0.8

The same movement is discernible even in the Western and North Central divisions, where, notwithstanding a slight increase in the largest farms, there has been a considerably greater increase in the smaller farms. The conclusion is that large-scale production is, even in the United States, far less applicable to agriculture than to industry, chiefly because the lower cost resulting everywhere from machinery is in the case of agriculture counterbalanced by the increase in land values and the consequent changes in cultivation.

146. Consolidation and Integration of Production.

Side by side with the immediate effects of machinery in enlarging the size of the individual business unit, we have the broader phenomenon of the capitalistic combination of production. This is of two kinds : first, the consolidation of like units into a larger whole, as in the union of separate shipping lines into the International Marine Company ; and second, the integration of unlike units, as the union of such originally different enterprises as mines, transportation companies, factories and mills into the United States Steel Corporation.

Combinations of capital have gone through several phases known respectively as agreements, pools and trusts, each being further divisible into two or more classes.

(1) The earliest form is the agreement of independent concerns to fix prices. This is the first natural effort to increase profits by restricting competition. It is found almost from the beginning of business enterprise. Its obvious weaknesses are the lack of any adequate penalty to prevent undercutting by any one of the parties to the agreement ; and the

inducement which the ensuing high profits hold out to new competitors. In the American railway business this plan, whether in the form of the earlier traffic arrangements or in that of the more recent presidents' agreements, never proved effectual. In general industry its efficacy is limited and doubtful.

(2) The next step is the agreement to divide the field, each enterprise contracting to limit its activity to a particular section. This plan also is subject to difficulties except in cases where the first comer possesses undoubted advantages through the mere fact of priority. The most familiar examples are the American express companies and the French railways, although even here there is some competition on the fringe of each field. Division of the field, however, is in most cases only a stage in the formation of a closer union, as in the so-called rival gas or electric light companies.

(3) The third phase is the pool, or the attempt to restrict the output rather than the price or the field. The pool is so named because the receipts are put into a common fund or pool, each member of the combination having an allotted percentage of production.¹ Ordinarily this takes the form of a money pool, the excess or deficiency in each case being paid in cash. Occasionally, as in some of the railway traffic-pools, the output itself is diverted from one member to another. When this apportionment is accomplished by secret favors to individuals, like the cattle, hog and oil "eveners," the abuses become notorious. Frequently the equilibrium is brought about by a fine on the excess production, instead of a technical pooling of the output or the proceeds. Here, again, the temptations covertly or openly to exceed the allotment in order to secure greater immediate profits or to furnish an argument for a larger percentage at the next distribution is frequently too strong to be resisted. To this danger the whisky pool, the beam pool and many others succumbed.

¹ The industrial pool must not be confused with the financial pool used for speculative purposes in the stock exchange.

(4) Sometimes the pool combines both features, the fixing of price as well as of output. Occasionally it goes still further and under the name of selling bureau or agency constitutes a fourth phase. The selling bureau not only fixes prices and output, but often manages the entire business of selling, taking all orders and distributing the respective allotments to each member. Many of the German *Cartells* are of this nature, although in some cases they are nothing but ordinary pools. Of the same character was the Michigan Salt Association, and many of the French *comptoirs* or *syndicats*. The weakness of the pooling arrangements is not only their instability, but also the fact that in Anglo-Saxon countries at least their provisions are unenforceable because repugnant to the common law.

(5) The fifth stage was reached in 1882 by the formation of the Standard Oil Trust, so called because the constituent enterprises turned over their business to a board of central trustees, receiving in return trust certificates and abandoning to the "trust" the entire operation of the business.¹ Although the whisky, the sugar and other trusts rapidly followed, the scheme was soon found to conflict with the law, the original trusts were dissolved, and the constituent enterprises were now combined in a new and still more effective way.

(6) The sixth form may be called the holding corporation. The original members of the combination are first organized as corporations, each maintaining its separate existence. A new central corporation is then formed to buy up or hold the stock, or at least a majority interest, of the individual corporations. On the basis of the income received from the constituent companies, the parent corporation issues its securities, and while each plant or business is operated as a separate unit, its capacity is virtually controlled by the directory of the parent company. It is the trust in a new and more effective form, preserving the unity of the old, but adding a certain flexibility

¹ The industrial trust must not be confused with the trust company, any more than the industrial pool with the stock exchange pool.

and responsibility. In its original form something like the holding corporation is found in isolated instances in an earlier period, as in the case of the Pennsylvania Company in 1870, the Bell Telephone Company in 1880 and the Southern Pacific Company in 1884. All these, however, were organized under special laws; the general legality of one corporation holding the stock of another was first made possible by the New Jersey Corporation Act of 1889. This led to a sudden outburst of activity in the formation of holding companies. Of this character are the United States Steel Corporation of 1901, the American Tobacco Company of 1904 and most of the newer combinations. The attempt to apply the same method to railways in the case of the Northern Securities Company failed because of special prohibitive legislation; but even here the same result is likely to be brought about through the so-called system of community of interests whereby the identical directors virtually possess a controlling voice in the management of each constituent company. This system of community of interests, as it is already found in some of our great financial institutions, where separate companies are controlled by the same individuals, may well prove to be the next step in a still greater combination of capitalist production.

147. Growth of Combination.

Combination of capital, as is obvious from the illustrations of the last section, has made itself manifest in four business groups: (1) the railroads; (2) the franchise or public service enterprises, including the telegraph, the telephone and the so-called municipal monopolies like water, gas and electric light, street railway, heating and conduit companies; (3) the trust companies in the narrower sense, the banks and the insurance companies; (4) the industrial combinations. The first three groups are so important in themselves and so clearly marked off from the others that they will be more appropriately discussed below. We shall confine our attention here to the industrial combinations.

The advantages of such combinations from the point of view of the producers are obvious. Large savings are possible in advertising and in travelling agents. The avoidance of cross freights by locating the establishments at different places is often of importance, especially in the case of heavy or bulky articles. The benefits of division of labor and large-scale production may be multiplied by concentrating departments and facilitating standardization by devoting each factory or mill to one particular product. The larger the concentration, the better are likely to be the knowledge and control of credit relations, so as to reduce the loss from bad debts. Again, more ample means are afforded to secure capacity of the highest order in the management of the enterprise. Finally, the wider view which comes from an interchange of ideas and a comparison of experimental methods in the separate plants is frequently of value. The president of the American Tobacco Company a few years ago declared this to be the chief benefit of combination.

The immediate causes of consolidation are various. It may, as in the railways or the sugar trust, be due to a realization of the folly of "cut-throat" competition; it may, as in the iron mines, be owing to the lower prices which render necessary the application of better methods to insure lower cost; it may be the result of a long period of depression which has almost eliminated profits. But at bottom combination is due to the economy of production that comes from concentrated capital. The immense profits often secured by the promoters may indeed be responsible for premature or dishonest consolidations, but such mere speculative projects are obviously short-lived. Unless there are some real advantages in the combination it cannot endure; the mere fact of its continued and prosperous existence justifies its formation.

The concentration of production is so general and world-wide a tendency that the attempt to trace it to any minor cause is useless. Combinations are sometimes ascribed to the tariff or to discriminations in railway charges. That these exert some influence in particular cases is more than probable,

but that they serve in themselves to explain the facts of combination is unlikely. Trusts and pools abound in the European countries where the tariffs are low or even non-existent. Freight discriminations are found in America, but are unknown in Germany; yet industrial combinations are well-nigh as common there as here. Whatever may be the contributing causes, the fundamental reason is clearly the economy of concentrated production. It is only in recent years that industrial capital has become so abundant as to disclose the real advantages of concentration.

According to the census of 1900 there were 185 combinations, representing 2,040 plants and turning out products to the value of \$1,667,350, a little over 14 per cent of the total industrial output of the United States. But since 1900 the movement has progressed rapidly. In 1900 there were 16 combinations each with a capital of over \$50,000,000 and with an aggregate capital of \$1,231,000,000. In 1904, as appears from the table opposite, not only were there 25 such combinations with an aggregate capital three times as great (\$3,617,000,000), but a single combination now has a larger capital than the 16 combinations, and about one-half as large as all the 185 combinations in 1900.

The United States Steel Corporation is such a striking example not only of the consolidation, but of the integration of production, that the following figures are appended. The assets of this corporation in 1902 were, according to the testimony of its president in a recent lawsuit,¹ as follows:

Iron and Bessemer ore properties	\$700,000,000
Plants, mills, machinery, etc.	300,000,000
Coal and coke fields	100,000,000
Railroads, ships, etc.	80,000,000
Blast furnaces	48,000,000
Natural gas fields	20,000,000
Limestone properties	4,000,000
Cash and cash assets	<u>148,281,000</u>
	\$1,400,281,000

¹ Hodge *et al. vs. U. S. Steel Corporation.*

In the second annual report of Dec. 31, 1903, the assets had grown to \$1,583,845,299. Contrasted with this integration of unlike industries, we have the consolidation of like industries

Name. ¹	When Founded.	No. of Plants Acquired or Controlled.	Capitalization, Outstanding Stock and Bonds.
1. United States Steel Corporation	1901	785	1,370,000,000
2. American Tobacco Co.	1904	...	250,000,000
3. American Smelting & Refining Co.	1899	121	201,550,400
4. Amalgamated Copper Co.	1899	11	175,000,000
5. International Mercantile Marine Co.	1902	6	170,786,000
6. American Sugar Refining Co.	1891	55	145,000,000
7. United States Leather Co.	1893	25	130,444,600
8. International Harvester Co.	1902	6	120,000,000
9. Standard Oil Co.	1899	400	97,500,000
10. Pittsburg Coal Co.	1899	207	84,000,000
11. American Can Co.	1901	123	82,579,000
12. Pullman Co.	1867	2	74,000,000
13. Corn Products Co.	1902	20	71,642,000
14. Crucible Steel Co. of America	1900	14	60,250,000
15. American Car & Foundry Co.	1899	17	60,000,000
16. United States Rubber Co.	1892	13	58,591,500
17. Lackawanna Steel Co.	1902	7	56,775,000
18. National Biscuit Co.	1898	80	56,524,000
19. International Paper Co.	1898	24	52,935,500
20. American Locomotive Co.	1901	9	50,418,500
21. Distillers Securities Corporation	1902	93	50,366,000
22. Trenton Potteries Trust	1903	45	50,000,000
23. United Copper Co.	1902	6	50,000,000
24. Dupont International Powder Co.	1903	40	50,000,000
25. Cambria Steel Co.	1898	3	50,000,000

shown in the following list. The ten subsidiary companies, (the Carnegie, the Illinois, and the Lorain Steel Companies, the American Steel and Wire Company, the National and the Shelby Steel Tube Companies, the American Sheet Steel,

¹ This table is taken from Moody, *The Truth about the Trusts*, 1904, p. 453, but brought down to date.

the American Tin Plate, the American Bridge and the Union Steel Companies), themselves the results of many consolidations, represent 86 blast furnaces, 31 Bessemer and open-hearth steel works, 57 blooming, slabbing, billet and sheet bar mills, 20 rail and plate mills, 251 puddling furnaces, 39 skelp mills, 59 bar, hoop and cotton tie mills, 11 structural shape works, 24 rod mills, 22 wire mills, 447 sheet, black plate and tin plate mills, 5 tube mills, 26 bridge and structural plants, 24 foundries and 16 miscellaneous works.

148. Effects of Combination.

The effects of combination may be regarded from the five-fold standpoint of the owner, the wage-earner, the independent producer, the purveyor of the raw material and the consumer.

(1) The owner in modern times is the corporate investor. So far as the problem is one of general corporate profits depending on the ordinary mutations of business, it will be discussed in the next book. So far as the profits are affected by the capitalization of the enterprise, it has already been touched upon. The surest protection of the innocent investor is to be sought, as we have seen, through the avenue of publicity and responsibility.

(2) The influence of industrial combination upon the wage-earner is to accentuate the general effect of capital upon wages, to be studied hereafter. So far as the prosperity of the laborers is bound up with the general productivity of the enterprise, the industrial combination which tends toward greater stability and enlarged productivity may work toward an improvement in their condition. To this may be opposed the consideration that the mere fact of concentration may enable the enterprise to present a more solid and effectual front to the demands of the trades-unions. On the other hand, the dangers of a strike are multiplied when it extends through all the ramifications of a vast trust. Finally, the far-sighted heads of a great combination are apt to take a broader view of the labor problem, and to seek industrial peace by wise concessions and a policy

of making the worker realize that his interests are in a large sense bound up with those of the combination. The American Federation of Labor has declared unequivocally that as a body of workmen it has no objection to the trusts. Yet when the combination becomes a monopoly, there is, as we shall see, a real and insidious lurking danger in its ultimate effects upon wages.

(3) The independent producer is undoubtedly assailed by the combination. We must, however, distinguish between the legitimate and illegitimate, the natural and unnatural effects of combination. Where the combination wins its way by better service to the public, the disappearance of the inefficient small competitor may be as advantageous to the community as was the substitution of the factory for the sweat-shop or the railway for the coach. Even for the individual himself, as long as he is not pre-eminently capable, it may often be better to be an official of a huge enterprise on a fairly secure salary and with prospect of advance than an independent producer continually on the fringe of defeat, in much the same way as the "independent" hand-loom weavers in England and America were glad to join the ranks of the factory operatives. To rid the community of the inefficient producer and to convert him into a useful agent may be the beneficial result of combination.

This, however, presupposes that the way is kept open for the efficient. In other words, combination ought not to be permitted to assume the form of monopoly, except in those quasi-public enterprises where competition is itself undesirable. The "unfair" means through which it is attempted to shut off rivalry are factor's agreements, so-called predatory competition and freight discrimination. The factor's agreements are arrangements whereby retailers are induced through various favors not to handle competitive goods. Predatory competition is the temporary cut in prices only at those points and at those periods when competition is threatened. Both these practices, however, are a part of ordinary competitive business usage. In competition, indeed, the benefit of the lower price

ultimately inures to the consumer; in monopoly it accrues to the producer. Yet since the practices themselves are irrespective of the nature of the business, it is questionable whether any effective means of checking them can be devised or would be tolerated. On the other hand, the secret rebates granted by the railroads are undoubtedly as remediable as they are unjustifiable. Combination turns into monopoly largely through railway discrimination. How far monopoly actually ensues will be discussed below.

(4) So far as the purveyor of raw material is concerned, much is supposed to depend upon the percentage of the output taken by the combination. Where the business is only one degree removed from the raw material of nature, and especially where the supply of this material is restricted, the tendency to concentrate the ownership of the raw material becomes very strong. It is significant that most of the largest combinations on the list in page 343 have grown out of an ownership of raw material which is not annually reproducible, like iron ore, copper and lead. In several cases, however, like oil, tobacco, sugar and beef, the combination does not own the raw material, because it is the result of annual production at once too minute and too widespread for concentration. In these and similar cases the complaint is often heard that the trust keeps down the price of the raw material by reducing its offer to the lowest limit. While there undoubtedly is some foundation for this charge, as especially in the recent history of the Beef Trust and of the Standard Oil Trust in Kansas, it is probable that the statements are frequently exaggerated. For in some cases, as in tobacco and sugar, the market is an international one, and even if the combination forms so large a part of the international demand as to control the price, the restriction of the offer below the cost of the marginal producer would have the effect of reducing the supply and thus ultimately leading to an increased price. As long as the total demand for the raw material suffers no appreciable change, it is questionable whether the concentra-

tion of demand into a few hands is apt to have a permanent effect on the producer of the raw material. Nevertheless the temporary consequences may be burdensome and injurious.

(5) Finally, the influence of the combination upon the consumer shows itself chiefly in the selling price. The advantage of combination is lower cost, but the object of combination is higher profits. It does not necessarily follow that higher profits mean, as is usually supposed, actually higher prices. If the demand can be stimulated by a reduction of price, higher profits are compatible with greater sales at lower prices. There is in every industry, competitive or monopolistic, an obvious limit to high price, caused by the possible substitution of some lower-priced equivalent. This commodity competition is omnipresent. The real problem, however, is whether in those combinations which produce so large a share of the output as effectually to control the market, the "trust" price is higher than would be the competitive price. A careful investigation into some of the leading combinations by the Industrial Commission disclosed the fact that during selected periods when the combinations were actually in control, the "differential" or margin between the price of the raw material and of the finished product had risen, even though the actual selling price might have declined. The problem thus resolves itself into the question: does the combination tend to become a monopoly?

149. Limits of Combination.

It is clear that if there were no limit to combination, the logical result in every industry would be a monopoly of production. As a matter of fact, however, there are two classes of limits, natural and artificial.

(1) The natural limit of combination is the persistence of competition. In certain branches this limit does not exist, and ought not to exist. In the railroad business the objection to competition is that it leads to discrimination. In the other public-service corporations competition might do more

harm than good. Competing telephones would be a source of lasting confusion to the patrons, competing gas and water companies a continual annoyance to the users of the streets. In some other branches of industry monopolistic combination is undesirable but none the less probable. As we have just seen, where the industry is concerned with, or based upon, masses of raw material found in a state of nature but in limited quantities and in specially favored locations, the control of the natural monopoly is apt to lead to a monopolistic combination of the business. In ordinary business, however, where the raw material is itself either a manufactured product or procurable under competitive conditions, the natural limits to combination are more obvious. In the absence of legal or natural monopoly, whenever profits are high enough to tempt competition, new-comers are likely to appear. The combination may swallow up the new competitor, but as long as science remains free, and the combination does not control the government or the general media of transportation, the process will repeat itself. The so-called "economic wastes" of competition are a cheap price to pay for its many advantages. Thus, while the United States Steel Corporation is constantly expanding, new competing corporations have been growing equally fast or even faster. Instead of a single combination, we have in each branch the looser concentration known as the pool, which has to be readjusted whenever a new competitor appears. At the close of 1904, after the Lackawanna Steel Corporation decided to make steel rails, the percentages of the Steel Rail Association were at once changed, and the arbitrator apportioned the output among the five members,—the United States, the Lackawanna, the Pennsylvania, the Cambria and the Maryland Steel companies. So in another domain of business, like the great department stores in our cities, there is no way of keeping out not only the large competitors, but the small competitors as well. Indeed the erection of these mammoth stores has not appreciably diminished the number of little shops.

Again, there are whole fields of industry where combination

is only slightly applicable. In the woollen trades, in the shoe factories, in the cotton and silk mills, as well as in numberless other industries, the combinations are apt to be short-lived or partial. Finally, in the immense domain of agricultural production the possibility of combination is almost entirely eliminated.

(2) The artificial limit of combination takes the shape of legislative restrictions. When this is not in harmony with the natural limit, its efficacy is small. It can at best only change the form of the combination. Thus the anti-pooling provision of the Interstate Commerce Law of 1887, and the Sherman Act of 1890, have been alike powerless to prevent the continuance in their essential features of the railroad pools and associations. The numberless Anti-Trust state laws have resulted in a change of form, not in a cessation of consolidation. We are only slowly awakening to the fact that what is needed is regulation rather than prohibition. In Europe the governments have long since recognized the futility of rigid prohibitions, and are now concerned chiefly with attempts at moderate control.

Most of the methods usually proposed to curtail combinations are ineffectual. The power of taxation may be invoked, but the higher tax on the great combinations can be evaded by reconstitution into apparently loosely united and legally separate units. The limitation of profits has been tried, but with equal lack of success, owing to the facility with which profits may be apportioned in other ways than dividends and in other channels than the shares of the parent company. The prohibition of demanding various prices at different places is practically inoperative. The limitation of charges has hitherto been feasible chiefly in such public-service corporations where the conditions of cost remain fairly constant. The reduction of the tariff, while doubtless desirable in particular instances like the tin plate industry, where monopolies have been sheltered under the tariff wall, is open to the objection that unless most carefully carried out it is liable to destroy the industry

as well as the combination, or, at all events, to injure the small producer equally with the large one. The assumption of the enterprise by the government is a last resort, far beyond the province of probable American policy.

It appears, then, that the methods of regulation most promising of success are the maintenance of equality in transportation and the securing of a reasonable publicity in the formation and conduct of the enterprise. These objects, as well as the removal of factitious advantages, once accomplished, the natural limits of combination will disclose themselves; and combination will turn into monopoly chiefly in those industries where monopoly itself is desirable. Evidently, however, in such cases the monopoly must be controlled, or, in last resort, managed by government itself. Where the natural regulation of competition is completely shut out, it must be supplanted by the artificial regulation of government. But where publicity and equality are preserved, the community may expect, in the vast mass of private industry, to reap the benefits of combination without suffering the burdens of monopoly. The practical policy of the future must rest upon a detailed analysis of the various classes of industry,—where combination is possible without monopoly, and where, on the other hand, monopoly itself must be frankly recognized and held in check.

Book III.

Value and Distribution.

CHAPTER XXIII.

PROFITS.

150. References.

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151. The Shares in Distribution.

All wealth that is created in society finds its way to the final disposition of the individual through certain channels or sources of income. This process is called distribution, and

the shares in distribution differ not only in amount but in kind.

Distribution, like production, is a social phenomenon. If every one consumed what he individually produced, there would be no exchange, no price, no distribution. In production we study the creation of the social income; in distribution we study its division. In the one case we regard it as the national output, in the other as the national dividend. In production we deal with the cost or expense of the factors which co-operate to create wealth; in distribution we deal with their remuneration. It is clear that the shares in distribution differ according to the character of production and the structure of economic life. Where, for instance, slavery exists, we cannot speak of wages; where the same individuals own the capital and do the manual work, we cannot well distinguish between profits and wages; where capital is not loaned, interest does not emerge. The modern science of economics is, as we have learned, due to the efforts to analyze the modern shares in distribution.

The study of distribution is primarily a study of the remuneration of the factors of production. Since each factor contributes to the common result known as the social income, there must be a certain part of the product traceable to each factor. There are hence as many shares in distribution as there are factors in production. The remuneration of labor is called wages. The remuneration of the fund of capital is called interest. The remuneration of the concrete things that possess a capital value is called rent. Sometimes rent is limited to the return from land; but since other things as well as land are rented, it is better, as we shall see, to call the remuneration of land land-rent or ground-rent in contradistinction to other rents. Finally, the remuneration of the entrepreneur, or the man who carries on the enterprise, is called profits. Among them, wages, interest or rent, and profits exhaust the entire social income.

In modern society differentiation of function has proceeded

to the extent that different classes control different agents of production. This separation, however, is not rigid. The same man may own land and factories ; he may be a workman and a stockholder in the same plant, as in the United States Steel Corporation ; he may be a farm-laborer and a tenant or a land-owner ; he may be a money-lender and yet be actively engaged in industry, commerce or agriculture. In the great mass of cases, however, the social class corresponds to a distinct kind of income, and in its broadest aspect the social shares in distribution correspond to the factors of production.

152. Ordinary Profits.

Profits are the income from business enterprise. They are not necessarily limited to capital. An employment agency or an Italian padrone may make profits from directing labor into the right channel. A real-estate operator may make profits out of selling land. Profits are a result of business enterprise, and the entrepreneur may deal in labor, in land, in capital or in all three. It is hence inexact to speak only of the profits of capital.

The best method of gaining an insight into the nature of profits is to consider, first, ordinary profits. By ordinary profits are meant the profits of a regular business that deals in a repetition of analogous transactions in competition with others. The term normal profits that is sometimes employed is less satisfactory, because it incorrectly implies that there is such a thing as a normal or general rate of profits, as well as because it brings to mind the conception of normal value ; whereas profits are a result of fluctuations in market value and would not exist in a state of normal equilibrium.

Profits are always a surplus. They are the difference between the cost of production or acquisition and the selling price. They form a differential, however, in a second sense. Profits are the surplus of the intramarginal over the marginal producer. At any given time, under competitive conditions, market price is the same (p. 234), but cost varies. The ex-

penses of production are manifold, but may in the most developed businesses be classified into wages, rent, interest on the capital borrowed or invested, taxes and miscellaneous outlays like insurance, advertisements and transportation expenses. All of these obviously vary from individual to individual. Some will display more care in the selection and arrangement of their labor force; some will choose a more advantageous situation, with a saving in both rent and transportation; some will accomplish better results with less capital and economize in interest as well as taxes; some will exercise more ingenuity in advertising or securing a market. At the bottom of the scale is the marginal producer, working under the least favorable circumstances, and who can nevertheless get no more for his goods. With him price equals cost; with the others price exceeds cost. The excess of price over cost constitutes profits.

It is evident that in the long run profits could not exist in a state of normal equilibrium. If there were no change in the general conditions affecting value — if, in other words, economic forces were in equilibrium and society quiescent in all respects save the existence of such a complete mobility of capital and labor as is implied in the idea of frictionless competition, — there could be no permanent profit to any producer. The gross earnings or gross profits would indeed include interest on capital invested; for if the business man did not earn interest on his capital, he would go out of business and loan his capital at the normal rate to some one else. So also the gross earnings would suffice to give him a bare compensation for his services, for otherwise he would enter some other employment as a wage-earner. Gross profits must include interest and wages. But there would be no net profits, or surplus profits, or profits in the real sense of the word. For as soon as a profit appeared the entrepreneurs in other fields who were just making expenses would at once bid against each other in their effort to secure capital and labor, until they would capture their share of the market, and the profits would dissipate themselves on

the one hand in the higher rate paid for the factors of production, and on the other hand in the lower price of the product due to the greater supply. What was added in one industry would be subtracted from another. In actual life, however, there is a continual change,—population varies, wants are modified, capital increases, the processes of industry and methods of enterprise alter. Competitive profits are due wholly to such changes. He who can take advantage of the market secures the gain.

Profits, again, are necessarily unstable. They last only as long as the economic fluctuation or variation from the normal condition continues. A new invention is the source of profit because it reduces cost; but when the patent expires and competition sets in, the influx of new producers will reduce the price to the new cost level and the profit will disappear. The profits may accrue for a time to individual producers or to the whole class of producers. When general demand augments or, as in common parlance, when times are good and sales brisk, every one may make money. The increased profits, however, will lead to greater production, and the relation between consumption and production will soon change, so as to usher in the "bad times" and a disappearance of profits. This rhythmic succession of inflation and depression will be studied later. Here it is desired to call attention to the fact that profits can last only as long as the economic dis-harmony or perturbation lasts, that is, as long as the forces are not in equilibrium. If the manufacturer continually introduces new inventions, he may retain his superiority over his competitors. If the demand of the community grows by leaps and bounds, it may keep ahead of the new production and for a long period afford profits to all producers. This may be true of a particular commodity or of a whole group of enterprises. At one period in the United States the shipping trade was particularly remunerative, at another the railroad industry, and so on. In a new section the supply of capital and labor may be so scarce that all business is lucrative; and the increase in

population may cause land values to rise, so that agricultural profits will be large. In an old country the general political and commercial relations may be such as to afford a growing foreign market, with the possibility of large and long-continued profits to the domestic producer. In every case, however, as soon as the original force has spent itself and competition has set in, the profit tends to vanish.

In this sense, and in this sense only, is it true that profits tend either to an equality or to a minimum. The older writers confused interest with profit. Interest is the return from the fund of capital; profits are the return from the conduct of business enterprise, irrespective of whether the enterprise deals with capital or labor or both. Interest is a part of cost; profit is a surplus above cost. Interest, as we shall see, has a normal rate; profits may have an average rate but no normal rate. The marginal producer earns no profits; the intra-marginal producers make profits which vary with the discrepancy of their cost from the market price. If in any businesses indeed profits are particularly high, the more efficient producers in other lines will transfer their capital to these occupations; but in these occupations, as in the others, the competitive profits will range from zero to large figures. If there is any equality, it is an equality of an average between much and nothing. On the other hand, while the tendency to an equality is true of average profits — which is of importance only as between occupations — the tendency of profits to a minimum is true of each particular occupation. There is under normal conditions of progress a tendency in the rate of interest to fall, but, as we shall see, never to vanish; there is under competitive conditions always a tendency for the rate of profits in each individual business to disappear.

Thus in ordinary enterprises profit is the great lure of energy, and competition the great destroyer of profit. Competitive profits, the union of both, are hence the symptom of progress. They can exist only by being continually renewed; they are not a tax on the community, but a draft on nature.

Profits are a result of price, not a cause of price. Production at a lower cost creates profits; competition forces price down to lower cost and eliminates profits. Profits can be maintained only by the creation of a continually newer cost level lower than the new price.

153. Aleatory Profits.

Profits are sometimes described as the wages of superintendence. There are indeed certain occupations where the income partakes of the nature of wages. The commissions of a broker, like the fees of a professional man, are really wages, even though they are popularly called profits. Wages, however, differ from profits in that wages are a stipulated income and profits a residual income. There is a normal rate of wages, there is no normal rate of profits. Wages are a part of cost, profits a surplus over cost. The entrepreneur may think that he deserves a return for his services, but whether he secures one depends on his competitors. There is always a certain level below which wages cannot fall, because no work would otherwise be done; but the very continuance of competitive profits depends on the abler producer cutting down cost to the point where the marginal producer earns no profits. The reduction of some wages to zero implies the starvation of the laborer and the crippling of the productive force of the community; the reduction of some profits to zero means the elimination of the inefficient and the continuance of progress. Above all, profits differ from wages in that profits are the direct result of price fluctuations. The question thus arises as to the dependence of profits upon chance.

Aleatory or chance profits exist in varying degree. Some are essentially unique or sporadic. If I find a pocket-book on the street or receive a bequest, the income is wholly aleatory. The law of chance governing such isolated occurrences may be of interest to the mathematician, but is of little importance to the economist. The line between aleatory and ordinary profits is, however, not so easy to draw. In the first place, we

have the great field of speculative profits, to be discussed in a moment. Secondly, there is an element of luck in all business. The oscillations of demand and supply are frequently influenced by accident. A flood, an invention, a war, a new whim in fashion, a chance occurrence of any kind, may affect the individual or the group, the producer or the consumer, and by influencing either cost or price modify business profits. In one sense all price fluctuations are accidental.

A distinction is sometimes drawn between industrial and pecuniary profits. By industrial profits in the broad sense are meant profits derived from the production and sale of reproducible goods, such as compose the great mass of the annual output of wealth. "Industrial" in this sense would include agricultural and commercial profits. Pecuniary profits, on the other hand, comprise the results of such transactions as have to deal only secondarily with production and primarily with sale, not from producer to consumer, but from one owner to another. The chief example of such pecuniary profits nowadays is the dealing in vast masses of vendible capital, irrespective of its industrial uses. Many of the large fortunes of recent times have been derived from such sporadic or fortuitous profits. When financiers trade in railway securities or "industrial" stocks, their profits on each isolated transaction may be independent of, or even opposed to, the best management of the corporation as reflected in higher quotations; for their profits may come from buying at lower, rather than selling at higher, prices. But even here, with all the abuses of which the practices are susceptible, the permanence of pecuniary profits as a whole is ultimately connected with industrial progress. If stocks go down, the profits of some must be counterbalanced by the losses of others; but if stocks go up, every one may participate in the gain, and even if there are some losses they may be more than compensated by the profits of others. Stocks, however, can rise permanently only if the enterprise earns more, that is, if it is industrially more efficient. Thus, while pecuniary profits may in individual cases be the

result of a change in ownership, with no assignable relation to the production or utilization of the commodities which the securities represent, pecuniary profits as a whole have, in last instance, a real connection with the industrial profits on which they finally rest.

Chance or luck, therefore, may often be the cause of sporadic profits, but cannot explain their persistence either for the individual or for society. The individual who attempts to secure pecuniary profits can in the long run succeed only if he uses good judgment, foresight and practical sagacity, thus eliminating more and more the influence of blind chance. The financier, like the manufacturer or merchant, is really a servant of society; like some servants, he may be refractory, unfaithful or treacherous, but in the main he will fare best when he best subserves the interests of society. The aleatory element is inseparable from profits, since profits are derived from fluctuations; but the ultimate cause of persistent profits is the ability of the individual to take advantage of the fluctuation,—and in the long run this ability plays into the hands of society at large.

154. Speculative Profits — Nature.

By speculation is meant the purchase or sale of anything in the hope of profit from an anticipated change in its price. It differs from ordinary trade only in degree, for all profit, as we have seen, has an aleatory element. The difference, however, consists in the fact that speculation concentrates and intensifies the forces which affect demand and supply.

Speculation was in former times chiefly place speculation. The practice of buying in one market and selling at almost the same time in another has been lessened by the modern means of transportation and communication, whereby price fluctuations between places have been minimized. It exists to-day chiefly in the form of "arbitrage" of stock or commission brokers, and its success depends on the rapidity with which their telegraphic facilities may enable them to anticipate

the published quotations on the exchanges. The more important form at present is time speculation based on price fluctuations after the lapse of an interval of time.

Speculation, again, may be sporadic or regular. Sporadic speculation is almost as old as business itself. It is the result either of a popular frenzy or of a deliberate scheme to take advantage of a temporary occurrence. An example of the first kind is the tulip mania in seventeenth-century Holland, when the most fabulous profits were made by those who had anticipated the short-lived demand for bulbs. So also the occasional speculative "booms" in real estate at present are the cause of enormous profits, followed by corresponding losses when the bubble is pricked. In such cases speculation is due to changes in demand, which it is almost impossible for individuals to foresee or to control. Supply, on the other hand, lends itself more readily to manipulation, and deliberate attempts are not infrequently made to accomplish this end. From the efforts of Joseph to buy up the corn crop in Egypt, and from the decision of the Greek philosopher to show his practical wisdom by purchasing in advance of the vintage all the winepresses, down to the modern pools and rings, attempts to corner the market are occasionally found. While sometimes successful in minor cases, they commonly fail when on a large scale. The failure is due (*a*) to the immensity of the capital required, (*b*) to the difficulty of procuring and retaining trusty confederates whose selfish interests may often be best subserved by selling when their principal is buying, (*c*) to the fact that rising prices will bring to the market all the reserved stock, and (*d*) to the danger of the substitution by the consumer of some cheaper commodity. Thus, while the successful corner in Harlem stock in 1863 laid the foundation of the Vanderbilt fortunes, the three most picturesque and gigantic attempts of the last two decades—the Chicago Leiter corner in wheat, the Paris Sécrétan corner in copper and the New York Sully corner in cotton—have all been failures, resulting in the ruin of the speculators.

Both classes of sporadic speculation are in the end socially disadvantageous, because the speculative price is driven far above or below the true value, with resulting losses in the process of restoring the equilibrium. The inordinately high cotton prices, due to the speculative attempts of 1904, well-nigh produced a crisis in the cotton industry in England and New England, and while the Southern planters temporarily benefited, the high profits led to such an increased acreage during the next season that the price fell below the cost of production. A moderately remunerative price would have been preferable to these sudden alternations of large profits and extreme losses.

It would, however, be a mistake to assume that all speculation is of this character. Speculation could never have become a part of the normal business life of modern times if it had simply these defects and anti-social characteristics. The modern stock and produce exchanges have a definite economic function to perform.

Speculation occurs in securities or commodities. The qualities which render a commodity peculiarly fit for regular speculative dealings are three in number: (*a*) it must be a staple, with a large and regular production; (*b*) it must be homogeneous in quality, so that any unit will be as acceptable as another; (*c*) it must be capable of ready definition and measurement. Accordingly we find exchanges devoted to cereals, like wheat, rye, barley, corn and oats, to coffee and sugar, to cotton and tobacco, to iron and tin. In the case of securities all those qualities are obviously present. The chief transactions on both the stock and produce exchanges may be summarized as follows.

If prices in the estimation of the speculator are high but tend downward, he will "sell short," that is, engage to deliver at a future time goods not yet in his possession. If, when the time arrives, he can purchase at the anticipated lower price, the difference constitutes his profits. Or the same result can be reached by a "covering" contract, so called because he

covers the short sale by making a purchase at a somewhat lower price deliverable at the same time. On the other hand, if prices are low but in his estimation tend upward, he will "buy long," that is, buy more than he would care to deliver at present; and when the goods are finally delivered he can sell at a profit. Or, as in the preceding case, he can at once make a "realizing" or "liquidating" sale at a higher price, deliverable at the same time. Because the "shorts" speculate for a fall, they are called bears (who pull down); while the "longs," who speculate for a rise, are called bulls (who toss up). When a substantial interval of time elapses between the two parts of the transaction, it is called a "future." Cotton futures, for instance, are dealt in months before the transaction is closed. June deliveries may be sold in January. Where the delivery is to take place at once, that is, on the spot or in the immediate future, we speak of "spot" cotton or wheat.

On the stock exchange most of the deliveries take place on the following day, although, as in New York, the option of delivery is sometimes three, sometimes thirty or sixty days. Apart from the mere gains in daily speculation through "scalping," the profits on the stock exchange are realized chiefly through loans. If the "short," for instance, is not ready to buy in the stocks when delivery is due, he arranges to borrow them, expecting to liquidate his loan by a future purchase at lower prices. *Vice versa*, the "long" purchaser who is not ready to sell arranges with a broker to "carry" the stocks for him until such time as he can sell at a profit. The broker protects himself against any possible fall in price by requiring the customer to put up a margin in cash, which differs with the price fluctuations. In the produce exchange it is the practice to deposit with some constituted authority the margin or sum sufficient to secure the other party from loss in case of failure to fulfil the contract for future delivery. Such transactions are therefore called speculating on a margin. In practice it is impossible to distinguish between margin dealings where there is no delivery and those where actual delivery is made or

contemplated, since the difference depends on the shifting intention of the speculator, and since in every contract actual delivery of the stock or produce can legally be called for. Finally, speculation takes the form of privileges. A "put" is the privilege to put or deliver to the other party at a definite time the security or commodity at a fixed price. A "call" is the privilege to call or demand from the other party at a definite time the security or commodity at a fixed price. Puts and calls may be bought or sold; when a speculator acquires the right of electing whether to put or call the stock the privilege is called a "spread" or "straddle." Prices of such privileges depend on the nature of the market, the nature of the security, the length of time the privilege has to run and the difference of the stipulated from the present market price.

155. Speculative Profits—Function.

The chief economic function of regular speculation consists in the assumption of risk and results in the equalization of price.

First, as to the assumption of risk. When, under the stress of modern capitalism, dealings in commodities became national and even international, the perturbations affecting market values grew to be so vast and so numerous that ordinary business was seriously compromised by the violent fluctuations in the price of the raw materials of industry. The manufacturer who bought his materials in the international market expected indeed a profit on the production of the finished article, but was unwilling to have this profit turned into loss by sudden changes in the price of the raw material. It was to secure an escape from the risks of such oscillations that a special class arose which assumed this risk and by concentrated attention derived a profit from the price fluctuations.

The first way in which risk is minimized for the ordinary business man and assumed by a regular speculative class is through the provision of a continuous open market. A cotton-spinner, for instance, accepts an order for goods to be delivered

in a year, and expects to begin spinning in six months. Unless he is able to buy now the cotton to be delivered then, he will be at the mercy of the chance variations in the cotton market, and although he may be the most capable of business men his entire profit may be wiped out by a rise in the price of cotton. The cotton future enables him to eliminate this risk. The same is true of futures in wheat or other commodities. It applies equally to the stock exchange. If a railway or other industry, in launching a new enterprise, had to depend on the chance investors at the time of the issue of the securities, it would be seriously hampered. The mere knowledge that at any moment there will be a ready sale on the exchange greatly increases the circle of purchasers, many of whom may not intend to be permanent investors. The stock exchange aids the investment of capital, as the produce exchange aids the production of finished commodities. Business orders and corporate needs are intermittent, because they depend on temporary exigencies; the risks at one end, at all events, are eliminated by the unintermittent, continuous market which regular speculation affords. The cotton exchange was the result of the disorganization of the cotton trade after the civil war; speculation in all the other staples has in the same way been the consequence of the efforts of the manufacturer to avert the risks of intermittent and spasmodic fluctuations in the raw material.

A natural and more recent outcome of this attempt to avoid risk is the practice of "hedging" or "covering" transactions. An English miller, for instance, needs wheat in February and buys his supply in California, let us say, at a price of 90 cents a bushel. By the time the wheat reaches his mill and the flour has been finally disposed of, it may be September, and the price of wheat may have fallen to 75 cents, with a corresponding fall in the price of flour. To protect himself against such a loss the miller sells in February at Chicago for September delivery the same quantity of wheat for the same price as that at which he bought, 90 cents. When September arrives, he again enters

the Chicago market and makes good his delivery contract by buying the wheat at the market price of 75 cents. His profits in this deal equal his losses in the other, and by this process of "hedging" contracts he eliminates all risk in price fluctuations due to the raw material. He is content to derive his gains from the legitimate profits of his milling business. (Through the use of such wheat and cotton futures we thus have the paradoxical result that the business man often resorts to speculation in order to free his business from speculative influences.)

The result of regular speculation, again, is to steady prices. If with wheat prices at 80 cents a bushel there is a prospect of a large crop, the intelligent speculator will sell short (a future) say at 70 cents, expecting to buy in at 65 cents. All this selling on the part of the bears, however, tends to reduce present prices and thus to increase consumption, which again tends to keep the future price from falling so low or so suddenly as it would otherwise have done. *Vice versa*, if a crop shortage is in prospect, prices tend to rise, the commodity becomes a "good buy" and the bulls are active. The increased purchases tend to raise present prices and to check consumption, while the owners in a rising market hold on for the prospective profit. This combination of a somewhat smaller demand and a larger supply will prevent such a sharp rise in prices as would ordinarily follow a bad crop. Speculation thus tends to equalize demand and supply, and by concentrating in the present the influences of the future it intensifies the normal factors and minimizes the market fluctuation. Speculation hence exerts a directive influence on price. A good example of this is afforded by the Gold Law during the civil war. The discount in greenbacks was mistakenly ascribed to the speculation on the gold exchange, and a law was enacted to prohibit all such transactions. As a result, the premium on gold jumped at once from 195 to 285, with wild fluctuations day by day, to be followed, after the hasty repeal of the law fifteen days later, by just as sudden a recession of the price.

Speculation is hence so perplexing a phenomenon because

of its Janus-like aspect. So far as it has become the regular occupation of a class, differentiated from other business men for this particular purpose, it subserves a useful and in modern times an indispensable function. The expert dealer on the exchanges, who studies and prejudges the market, will in the long run secure profits by reducing risks and steadyng prices. In this wider sense speculative profits are earned like other profits. On the other hand, numbers of individuals without experience or ability are constantly taking "flyers" on the exchanges, and gamble in securities or commodities as they would in cards. Speculation here is as demoralizing to earnest effort and thrift as is the lottery. Moreover, even the professional dealer will often indulge in what we have termed sporadic speculation, and by an extensive manipulation of the market bring about the unsteadyng of prices usually connected with a "squeeze" or a "corner." Difficult as it is to draw the line in practice, the distinction between economic and uneconomic speculation is faintly recognized in the ordinary attitude toward the bucket-shop as compared to the stock exchange. It will be more clearly appreciated in the future when the exchanges themselves exercise a more rigid scrutiny over the actions of their members, and when business ethics will be lifted to a higher plane of social responsibility. At present speculation has its economic abuses as well as its economic function.

156. Monopoly Profits.

In the preceding discussion profits, whether ordinary, aleatory or speculative, have been assumed to be subject to competitive influences. The free play of competition, however, is often obstructed by natural or artificial barriers. When these obstacles are only partial, we speak of economic friction; when they are complete, we are in the presence of monopoly. In the case of friction, the fortunate possessor of the temporary advantages secures an extra gain, which, as we know, will ultimately disappear. In the case of monopoly the extra

gain seems to be permanent. In a deeper sense, however, even monopoly profits are not permanent. This is due to the principle of capitalization, discussed above (ch. xiv). As soon as the monopoly producer disposes of his business, the profits are capitalized into the higher selling price, and the new purchaser will secure only the interest on the capital outlay. While monopolies are not often sold, the same result is reached through the modern corporate form of business. For here the securities, which entitle each holder to a share of the monopoly profits, are so influenced by the forces of the market that large dividends are at once capitalized into higher market prices, with the result that the net returns to the new purchaser will be only the current market rate of interest. Thus, under modern economic conditions, even monopoly profits tend to dissipate themselves. They are essentially transitory, except in the hands of the original owners. With the continual shifting of ownership, so characteristic of modern life, the original possessors soon disappear. Since, however, the original owners at any given time are an appreciable body, monopoly profits often assume a great importance.

Monopoly incomes, like competitive incomes, are not limited to profits. A class of workmen may be able to restrict entrance to their trade or to prevent competition with it. In that case they would secure monopoly wages. Where the investments by banks, savings institutions or trust estates are confined by law to a specific kind of bond, there is virtually an element of monopoly in the price of that security. Where a particular city plot is wanted for specific purposes, the element of superiority in the site approaches so close to monopoly that we can without gross error speak of a monopoly rent. Monopoly profits, however, like all profits, are a result of price. As we have already discussed the differences between monopoly price and competitive price, we may pass these by in this place with the mere reminder that monopoly profits are by no means without bounds. The two natural limitations on monopoly price, and hence on monopoly profits, are the existence of

substitution and of potential competition. In the first place, as we have learned (p. 256), even where the monopolist is securely intrenched, there is always a point of maximum monopoly revenue depending on the price at which the greatest sales can be effected. Any increase of price above that point will lead to the falling off of sales through the substitution of some analogous commodity, and thus to a decrease of profits. The failure of the Sécrétan corner in copper was largely due to the unexpected use of substitutes, caused by the forcing up of the price. Secondly, when, as in many cases, the monopolist is subject to the potential competition not of similar commodities but of other possible producers of the same commodity, his tendency to raise prices will be limited by the danger not only of a falling off in the general demand, but of the capture of a part of this existing market by some new-comer who is tempted by the prospect of similar profits. Within these limits, however, there is still a large field for the extra gains known as monopoly profits.

157. Regulation and Justification of Profits.

The demand for governmental control of profits comes from three sources,— those who object to ordinary profits because they oppose private property; those who decry aleatory and especially speculative profits; and thirdly, those who desire to eliminate monopoly profits. Let us discuss these in inverse order.

(1) Unrestricted monopoly profits, are of course, socially undesirable. Even where monopoly is not in itself objectionable, as in special fields like transportation and certain municipal enterprises, some substitute for the automatic regulative action of competition must be secured. Experience, however, has repeatedly shown that this cannot take the form of a regulation of profits. The most recent attempt, as that of Massachusetts with the gas companies, has, like all its predecessors, been frustrated by the ease with which profits can be adroitly diverted into the income of subsidiary enterprises. Efforts to regulate

profits always result in profits nominally within the limit. The only two effectual ways to deflect monopoly profits to the public are either to regulate prices, which will prevent the profits, or to tax the enterprise, which will reduce the profits. The surest method, however, of eliminating monopoly profits is to eliminate the monopoly by keeping open the door of opportunity.

(2) Speculative profits, on the other hand, cannot be reached in this way. Monopoly can be distinguished from competition, but regular speculation cannot be sharply set off from ordinary business. The recent anti-option laws of Germany have either been ineffectual or have done harm in preventing the legitimate and economic benefits of speculation. To prohibit speculation is to prevent the good as well as the evil. Taxation, again, is applicable only to certain aleatory profits. The effort to tax speculative profits encounters the well-nigh insuperable difficulty of causing the tax to be actually borne by the recipient of the profits. Finally, the prohibition of speculative prices is virtually equivalent to the futile prohibition of speculation itself.

(3) The opposition to ordinary profits emanates from those who deprecate the entire constitution of modern industrial society. According to Marx, for instance, profits are a defalcation from wages. Since all value, according to him, is the product of labor, the surplus value which is called profits is a surplus filched from wages. The socialist theory of surplus value, however, is defective in four points: (a) It identifies labor with manual work and neglects the wages of superintendence; (b) it ascribes value to labor, whereas labor is not the cause of value; (c) it reduces the factors of production to one, whereas in actual life there are almost always more than one; (d) above all, it overlooks the fact of marginal value. Even if we roughly state that prices vary according to cost of production, and even if for purposes of argument we concede that cost of production is reducible to wages, all this would apply only to marginal cost. The marginal producer, however,

normally earns no profits, and the surplus which is secured by the intramarginal producer may come from a dozen other sources than wages. In point of fact it is most unlikely to come from wages, since wages under competitive conditions are apt to be the same for the identical work in all the enterprises, whether marginal or intramarginal. Profits are indeed a surplus, but they are not a surplus of the kind imagined by the socialists. The only way to get rid of profits is, as the socialists correctly state, to abolish private property in the factors of production. The abolition of private property, however, would be the abolition of progress.

This, of course, does not imply that all existing profits are defensible. Fraud and chicanery still stalk abroad ; illegitimate privileges are seized or extorted ; unfair advantage is taken of weakness or ignorance ; public franchises are dishonestly acquired or inadequately compensated. All this is to say that many individuals are still on a low plane, and that the level of commercial morality is not so high as it ought to be and as it some day will be. This, however, does not touch the legitimacy of profits as an institution. Profits honestly acquired are in the main an inevitable concomitant of private property. With monopolies reduced to a minimum, with speculation restored to its true economic function and with competition conducted on the high plane of honesty and fair dealing, profits will be purged of their alloy and will stand forth in their true light as the legitimate fruit of energy and foresight.

CHAPTER XXIV.

RENT.

158. References.

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159. Nature of Rent.

Rent, as we have learned, is the product of, or income from, the single use or succession of limited uses of a thing, and rental value is to be contrasted with capital value. In ordinary parlance, however, rent signifies the money payment to the owner for such a limited use. According as we regard it from the point of view of making or of receiving the payment, to rent anything is to dispose of or to pay for its use. When the social conditions are such that some one commodity is commonly rented instead of sold, its income in general is apt to be called rent. This was true of land during the middle

ages in Europe, and is still true in those countries where mediæval customs survive or where modern conditions have brought about a relation of landlord and tenant. Since most of the land is rented, rent has come to mean the income from land, whether rented or not; and since the chief thing that is usually rented is land, rent is often made synonymous with the income from land alone.

It is obvious, however, that this is doubly confusing. In the first place, in some countries land is more commonly sold than rented. This is the case with agricultural land in a community of peasant proprietors or of individual farmers; and with urban land in all those districts where the inhabitants, rich or poor, own their homes. When land is sold instead of rented, the proceeds certainly do not constitute a rent. They might indeed be called a capitalization of the rent, because they involve a payment for all future uses. Secondly, other things are often more commonly rented than is land. Apart from the fact that the rental of real estate frequently includes the rent of a house, which is economically distinct from the land, men may live in their own houses and yet rent telephones by the year, carriages by the month, plants by the week, and awnings or table furnishings by the day. Land rent is qualitatively only an insignificant part of all rent.

Nevertheless, land is quantitatively so important as compared with any other single commodity, and possesses so unique a social significance, that the income from land merits a separate study. It must be remembered, however, that the utility of such an independent discussion emerges only when we regard society from the point of view of change,—that is, when we consider rent historically, or compare the growth of land rent with that of other rents. If we take a cross section of society at any moment, and analyze the distribution of the social income, the rent of land is to be explained in no different way from that of other things. The rent of land is its economic product, that is, the contribution of land over and above that of the labor and the capital employed on the land. The law

which at any given moment governs the relation of the land to its product is the same as that which governs the relation of any economic good or factor of production to its product. Much confusion has resulted from the failure to observe this warning.

The traditional law of rent, for instance, includes three statements: rent is the result of the law of diminishing returns; rent is a differential or surplus over marginal or no-rent land; rent is not a part of cost of production. So far as these statements are true, however, they are not peculiar to land rent.

160. Relation of Land Rent to Other Rents.

The law of diminishing returns is indeed the foundation of the law of rent. A farmer will sometime reach a point where it will not pay him to add another laborer or another machine to his land, because beyond the margin of profitable expenditure every additional "dose" of capital or labor will mean a return insufficient to cover cost. In every case he will reach the extensive or intensive margin of the utilization of land. This, however, is not peculiar to the landowner. The capitalist will also reach a point where it will not pay him to buy more machines of a certain kind, or to build another factory devoted to some particular product; and the laborer will reach the point where he cannot profitably tend more looms. The law of diminishing returns is universal, and applies to everything that possesses value (§ 88). If it explains the rent of land, it will equally explain, as we shall see, the interest of capital and the wages of labor.

Secondly, it is said that land rent is a differential or surplus. So, however, is every other kind of rental value. The value of everything is a differential or surplus as compared with the value of something else lower down in the scale. It may be claimed that land rent differs from other rents in that the land at the margin is no-rent land, and that land rent is therefore due to the differences in the productivity of good land over

no-rent land. To this the obvious rejoinder may be made that we can equally well speak of the no-rent machine or the no-rent factory. The reason that we do not commonly use such terms is because machines and factories are not so frequently rented as is land. The principle, however, is identical. The land at the margin may be so poor that no rent will be paid for its use ; but the machine at the margin may also be worthless in just the same sense. In fact, as we have seen in the last chapter, the existence of profits depends upon the surplus earnings of the intramarginal producers. It makes no difference whether the marginal producer uses poor land or poorly situated land or poor machinery or poor buildings or poor workmen, he will earn no surplus. From this point of view rent is analogous to profit : profit is the surplus over the income of the no-profit producer ; rent may be said to be the surplus over the income from the no-rent commodity. This has led some writers like Walker to maintain that the laws of profit and rent are identical.

It would be an error, however, to press too closely this analogy between rent and profit. In the first place, rent is a surplus only in the sense that everything positive is a surplus over zero, — a statement which is of little help. The rent of a boat is a surplus over that of a no-rent boat ; the wages of a laborer is a surplus over that of the convict or no-wage laborer ; the interest of capital is a surplus over the capital so invested as to earn no interest. But secondly, if we regard rent as a surplus, it differs from profit in that rent is a permanent, and profit a transitory, surplus. If a machine is used in a factory, a certain part of the product will be traceable to it ; that is, it will earn a certain return or rent for its owner. Under free competition the price of that machine will be, as we know, the capitalization of its rent, due regard being had to the number of machines. In a state of normal equilibrium the conditions of supply and demand will so adjust themselves that the marginal producer will in the long run give for a commodity only what he can get out of it, and others will not give more. If

all the machines are precise duplicates and are worked under the same conditions, their earnings or rent will in the long run be equivalent to the interest on the capital invested in them. It will be a permanent return as long as the machines work in unimpaired efficiency. If the machines did not earn the rent, no one would buy them at that capitalized price. On the other hand, the only way in which profits can be secured is by the owner working his machine under different conditions, that is, by giving it more care and combining it with different proportions of labor or land, taking advantage of variations in the market, and so on. These profits, as we know, are under competitive conditions essentially transitory, and will disappear unless renewed by the use of new machines or a new shifting of the productive factors. If better machines, however, are used, the surplus gains secured by the producer are really the difference in the rent or product of the good machine over that of the poorer machines of his competitors. To the extent that his profits are a differential derived solely from the use of the better machine, he can enjoy them only as long as he guards the secret, that is, as long as he retains a monopolistic advantage. Even in the case of monopoly, however, the profit, as we know, will disappear through the process of capitalization as soon as the machine or the business changes hands. Thus, while the rent is permanent, the profit is transitory.

Precisely the same is true of land rent. If in a certain section of a city, where for a long time there has been no change, there are a hundred equally desirable contiguous lots, each of them will rent for the same amount. The rent is a differential only as compared with less eligible sites yielding a lower rent, and finally with land on the outskirts, which, like the Hoboken flats near New York, is worthless for residential, business, farming or other purposes, and which therefore has no capital value because it yields no rent and no product. Competition between each of the hundred lots will keep the rent of all at a point corresponding to the interest on their capital value. The landowner can earn no surplus on this

investment as long as conditions do not change. If, however, a new street is opened, or for some reason one of the lots acquires a higher rent, the landowner will secure a surplus over the interest on the original purchase price. Whether this surplus is called profit or rent is often thought to be immaterial; in point of fact, when a man sells his land he calls it profit; but until he sells he calls it rent. Strictly speaking, however, the rent is the total periodic return of the land, the profit only the surplus of the periodic or capitalized return over the cost, or in this case over the interest on the invested capital. As soon as the plot is again sold, the price which yields the old owner the profit is necessarily the price at which the rent will yield the new owner only interest on the capital. Profits are thus automatically extinguished by transfers. Rent is permanent as long as the rent-bearing investment lasts; profit disappears each time that it is capitalized into a new selling price. The difference between rent and profit is applicable to land just as to other things.

161. Rent and Price.

Thirdly, it is stated that land rent is not a part of cost, and that high rents are therefore a result, not a cause, of high prices. It is no doubt true that if wheat is raised on land which differs in fertility or situation, competition will force the price of all the wheat of the same grade up to the cost of the marginal producer, that is, the farmer on the poorest land. The intramarginal farmer will secure a surplus; and if we call this differential surplus rent, it may be said that this differential does not enter into the price. Precisely the same, however, is true of every other share in distribution. Substitute for the plots of land sewing-machines rented out by the month or year. Some of the machines will turn out, let us say, more vests of the same quality than others. All the vests will sell at the same price, namely, the cost of the marginal producer with the poorest machine, and the difference between the marginal product and the output of the better machine will

under competitive conditions go as a surplus rent to the owner of the better machine. The surplus seems to be not a part of the price. Again, different employers may utilize different grades of workmen to fell trees or to build railways. One uses a three-dollar American, another a two-dollar French Canadian, another a dollar Italian. Yet, as Lord Brassey discovered in railway construction, the high-price workman is not really more expensive, because his output is greater. If he did not earn the higher wage, he would not in the long run get it. Since all the trees sell at the same price, as fixed by the marginal producer who is using the least efficient workmen, the higher wage of the American represents a surplus product or labor rent over the low wage of the Italian. If we say that the higher rent of the good land does not enter into the price of wheat, we can equally well say that the higher wage which represents the surplus product of the American does not enter into the price of trees. The good land rents or sells for more because it produces more,—the rent is the product: the high-grade laborer secures higher wages because he produces more,—the wage is the product. The wages of every different grade of workman are a differential in the same sense as the rent of different grades of land or capital is a differential.

It will be said, however, that there is a distinction, because even the lowest wages are beyond peradventure a part of the cost. So, however, is the rental paid for the worst wheat land. The confusion arises from supposing that the worst wheat land is no-rent land. It is indeed no-wheat-rent land; but this may still be worth a considerable sum per acre, because it can be used for other purposes. If the farmer cannot permanently earn an income from wheat, he will raise other less valuable cereals, or vegetables, or hay, or use the land for pasture. Every piece of marginal land — that is, the poorest land in use for some particular product — is worth something for the raising of a less valuable product, until we finally reach land that is worth nothing for any purpose. In the cost of the wheat, therefore, there must always be included the rent which the marginal

(or no-wheat-rent) land would earn if employed for the next lower use.

Furthermore, not only must the marginal rent always be included in cost and therefore in price, but in a higher sense the differential rent, as a permanent phenomenon, is also a part of price. The rent of anything is its product ; the greater product of the better land forms as much an element of the supply as the smaller product of the poorer land, and price depends on the relation of the total supply to the total demand. If the better land yielded less, the total supply would be smaller and the price would rise, thus leading to the cultivation of a new marginal land. Price in general, as we know (§ 112), is not fixed by the marginal or maximum cost but at the marginal cost, and the margin depends upon the output of the better grades, receding as this increases, advancing as it falls. Every bushel of wheat, whether it comes from good or poor land, affects the supply, the price and the margin.

To say that rent does not enter into price is doubly confusing, not only because it implies that land rent differs in this respect from other rents, but also because the general statement is itself misleading. If two different instruments or two different grades of the same instrument are permanently used to produce a certain commodity, their rent or permanent contribution to the product will of course differ. If the owner of the better grade is magnanimous enough to present this permanent surplus to the one who rents the instrument, that is, if he remits the rent, it will indeed make no difference in the price as long as the product is finally sold on the market. In this sense only can it be said that rent does not enter into price ; for the price will be uninfluenced by the fact whether the owner retains or foregoes the rent. If he remits the rent, it will disappear so far as he is concerned, and the rent will in that sense not enter into price. It is clear, however, that what really disappears is not the rent, but its original ownership. The rent still exists, although it is now in the hands of the tenant. If a sewing-machine company gave certain

operators the use of the machine free of rent, and if the vests were sold at an unchanged price, the rent would stay in the hands of the operators instead of the company. The only way the rent can be made to disappear is to destroy the product. The transfer of ownership does not blot it out. The rent of the better instrument is the product of the better instrument. Each unit in the supply is a part of the total product or total rent, and must therefore affect the price. Hence the rent or product of any instrument of production, whether it be land or capital or labor, whether it be marginal or differential rent, is really an element in the price, in the sense that were it not for that product the price would be different. Land is here in precisely the same position as other things.

Notwithstanding these analogies of land rent to other rents, however, there remains one difference to which attention has already been called. In the case of so-called manufactured commodities, increase of demand and production often goes hand in hand with lower price; in the case of land increase of demand generally means higher price. The supply does not respond to the demand with the same rapidity. Land is indeed not alone in this respect, for the same is true of many things that cannot be duplicated or easily reproduced. Land is, however, of such overwhelming importance, as compared to those other things, that when we consider its influence on the progress of value it is usefully contrasted with them. We shall therefore proceed to consider more specifically the rent of land.

162. Growth of Land Rent.

A distinction is sometimes drawn between land rent and ground rent: the former is the rent of land for securing some material produce, the latter the rent of ground used as a building site. Practically the distinction is one between agricultural and urban land. Strictly speaking, however, rural land can be utilized for other than agricultural purposes, while land within the city limits is sometimes used for agriculture.

According to some authors land rent arises from the fact that the price of agricultural products is the same while the cost of production differs; ground rent, from the fact that prices differ while the cost of production remains the same. This, however, is inaccurate. Ground rents differ for precisely the same reason as land rents, that is, because city lots, like country tracts, vary in their power of affording utilities. Both are productive, even though they produce different kinds of utilities; the rural land has a value because its material products are wanted, the urban land because it is needed as a support of a house or the meeting-place of human beings. To assert that the value of land is due to fertility or inequality or scarcity or monopoly is either half true or inadequate. Situation is as important as fertility. Inequality is a measure of the difference in value, not the cause of value. Scarcity is an ingredient in the value of every economic good. Monopoly may perhaps be predicated of particularly choice sites, but hardly of land in general, the different qualities of which shade into each other by imperceptible gradations, from the vast mass of unoccupied land upward. The rent of each piece of land is due to its productive efficiency, and the rental value of any plot is the expression of its marginal contribution to the product.

In discussing the growth of rent, therefore, the location of the margin becomes of importance. We must remember the distinction in § 73 between the economic and the non-economic margin. The margin may be at such a point that the value of the contribution is zero. Here we have the non-economic margin. This may be due to the fact that the land is either so abundant or so poor in situation or fertility that the value of the produce will only just remunerate the labor or the capital employed. The product must normally suffice to pay current wages on that grade of labor or current interest on that class of capital, because otherwise that labor and that capital would be withdrawn to other enterprises. But there will be no surplus. The land, in other words, will yield no rent, because its contri-

bution at the margin is zero. The value of the joint product is due wholly to the labor and the capital.

If, however, population grows so that the same product now acquires an increased value, there will be a surplus ascribable to the land. If all the land were of the same grade, and if it remained unaltered in quantity, this surplus would be divided equally. Since, however, land differs in fertility and situation, any increase in the demand will result in the better grades securing the greater part of the surplus, while the land formerly at the margin will yield a small surplus, and land hitherto unutilized will become a new margin, yielding mere wages and interest. If for some reason the supply of land cannot be increased beyond a given point, the intensive margin will be moved up, and the marginal or poorest land will now also yield a surplus. The intensive margin now becomes a base from which the surplus of all land is calculated.

The simplest illustration is urban land. If a cross roads hamlet springs up in the centre of an agricultural district, the land previously of use only for farming purposes yields an additional rent as the site of cheap wooden structures. The margin has been extended. As population and prosperity increase, the hamlet grows into a village, a town, a city, and the successive tracts acquire a rent so high that the cottage gives way progressively to the brick building, the stone mansion and the steel sky-scraper. Just as we speak of pasture land or wheat land or truck gardening land, so we can speak of cottage sites, brick-building sites, stone-mansion sites and sky-scraper sites. Each class of land can be best utilized for certain purposes, and there are as many margins as there are classes. With every change each margin is pushed farther out, the difference in the rent of all intermediate sections being finally in proportion to the distance of the lowest margin or suburban farm area from the centre. The location of the margin depends on the extent of the demand as modified by the means of transportation. Each addition to the demand will call forth an addition to the total supply, but since this addition can

come only at the fringe, it is an increase of less eligible land. Increased demand for houses can be met by building equally good houses; increased demand for sites can be met only by less eligible sites. Under ordinary conditions of progress, therefore, ground rent may be expected constantly to increase.

The expectation may, however, be frustrated not only by the fact that different sections of the city may prosper unequally, but also by the fact that an improvement in the means of transportation may decrease the relative eligibility and therefore the rent of intermediate sections. These practical considerations have an important bearing on the problem of the shifting of a tax on ground rent as compared to house rent.

In the case of land rent the interference with the normal growth is more pronounced than in the case of ground rent. While it is ordinarily true that the best lands will be first cultivated, it has happened in many parts of the world that the less fertile lands on the hillsides were preferred because they were relatively safe from the incursions of marauders. With the advent of peaceful conditions, recourse was had to the better lands in the plains or valleys, with an ensuing fall in the rent of the original tracts. The same result is often brought about by the opening of fertile lands in newer sections. The entrance of the middle and far West into the international market, with the consequent increase of supply and lower price of wheat, has resulted in a great fall in rents in those parts of New England and Europe exposed to the competition. Finally is to be noticed the effect of agricultural improvements. If they apply to all lands, they will lessen the cost, make possible the relocation of a new and lower margin, and reduce the price and therefore the rent of all lands. If the improvements remain, for a time at least, the exclusive possession of the more ingenious or capable farmers, whereby their share of the increased output more than outweighs the reduction in price, their rents will increase. If this advantage accrues to entire sections or countries, the rent in them will grow at the expense of the others, just as in consequence of improvements in transportation the

rents in the far West of America have increased, while those in New England have diminished.

Whether land rents in general, at any given period, will increase or decrease depends therefore on the relation of population to land. Growth of population or an elevation of the standard of life means increased demand; improvements in production or transportation mean increased supply. When the population keeps ahead of the improvements, rents will rise. When the improvements keep ahead of the population, rents will fall. Since, however, the demand for food is nowadays of an international character, a rise of rent in those countries or sections which possess or retain the advantage of the improvements will still be compatible with a general increase in population. In modern times the increase of population is more and more due to the growth of industry, which is again ascribable to improvements in production. At bottom, therefore, the growth of rent depends on the relative rapidity of improvements in industry as compared with those in agriculture or in industry applied to agriculture. Since there is on the whole a broader field for industrial improvement, it may be surmised that ultimately land rents will normally rise. For long periods in history, however, land rents may remain stationary or even decline, not only in particular countries, as at present, but in the world at large.

163. Land Rent and Land Tenure.

Since land rent is the permanent surplus or periodic product of the bare land, it is to be distinguished from what often seems to be the total return of the land. If a man works the land, a part of the product is really wages; if he applies concrete capital to the land, another part is really the rent of those instruments, which in the long run must be equivalent to the interest on the capital invested in them; if he combines the factors, so that for the time being he can undersell his competitors or secure a greater output at the same price, still another part of the product is profits. The wages and

the interest are permanent ; the profits will disappear as soon as they are capitalized into a higher selling value of the land or as soon as the methods of the more successful cultivator become general.

When a farmer owns and works the land, it is difficult to distinguish these various shares in the product. When the owner supplies the land and part of the capital to the tenant who does the work, it is slightly easier to disentangle the shares. When the proprietor furnishes the land and the tenant does all the rest, we have the simplest example. In such a case the contract rent paid by the tenant in money or in kind is the economic land rent proper ; the surplus above the contract rent represents his wages as well as the interest on his invested capital and his profits. The wages and interest, as we shall soon learn, are fixed amounts, while any excess which he can for the time being retain constitutes his agricultural profits. If, however, the profits are due to improvements the secret or knack of which the tenant cannot permanently retain — as, for instance, the use of new manures or of better crop rotation — they will disappear. According to the conditions of the market the surplus will either be dissipated into lower prices for the produce, or, on the contrary, will be converted into a higher rental value of the land. The only permanent constituents of the output or price under competitive conditions are wages, interest and rent.

The contract rent paid in money or in kind for any plot of land thus tends under competitive conditions to be equal to that sum which will just enable the marginal or least efficient tenant to make normal wages and interest. From the point of view of profits it is a non-economic margin (§ 73) ; from that of interest or wages, an economic margin. That is, the tenant at the margin makes no profits, but if he did not get back his interest on capital he could not afford in the long run to use the capital, and if he did not earn current wages he would become a wage-earner. The competition for different plots of equally good land tends to force the rent up to the

point where no profits are left for the least efficient competitor. The rent paid for land is thus the amount that is produced by the marginal farmer in excess of wages and interest. Under competitive conditions this excess goes to the owner, while any temporary surplus goes as profits to the tenant.

Under actual conditions the contract rent may diverge from the pure economic rent. This is due to economic friction. Economic rent may be defined as the rent which an intelligent tenant who enjoys complete mobility of labor, who has an alternative investment for his capital and who is thoroughly acquainted with the conditions of the market, could afford to pay. But where there is ignorance, lack of opportunity or lack of mobility on the part of the tenant, actual rent may be higher than economic rent. On the other hand, where for social or other reasons the owner does not exact the uttermost farthing, the actual rent may be lower than the economic or rack rent. This, however, is just as true of other rents as of land rents.

While the simplest form of land rent is that for the use of the bare land, experience has shown the utility of a different method. This is known in Europe as the métayer plan and in America as the share system, because the owner and tenant share in the factors of production and therefore in their remuneration. Share tenure is thus contrasted with cash tenure, where the tenant pays a cash sum for the use of the land and keeps the rest of the product. The most complete development of this has taken place in the Southern states, where no less than three important variations of the share system are found. They are known as the cropping system, the "third and fourth" and "standing rent" methods. In all cases the owner furnishes free of charge a dwelling-house, wood and water, pasture for pigs and cows and a small plot for a truck patch. In the cropping system the tenant or cropper does all the work and supplies his own food; the landlord furnishes seed, farming implements, animals and half the fertilizer. He also bears half the expense of ginning and wrapping the cot-

ton. The crop is then divided equally, and the system is hence sometimes called farming "on halves." In the "third and fourth" system the owner provides everything except the labor, the tenant getting one-fourth of the crop; or the tenant furnishes in addition his own food and receives one-third of the crop. More commonly, however, the same name is applied to the system where the tenant furnishes labor, tools and animals, while the owner gives only the house and land, and therefore receives only one-third of some crops, like grain, and a quarter of others, like cotton. That is, the landlord and not the tenant gets the third or the fourth part of the product. In such cases the "third and fourth" renter occupies a relatively higher position than the mere cropper. In the case of "fixed" or "standing rent" the landlord furnishes nothing except the minimum mentioned above as common to all share systems, and likewise exercises no supervision over the labor of the tenant. The "standing rent" system always calls for the production of some specific commodity, while in the money or cash rent system the tenant is free to do as he likes. "Standing rent" is thus the nearest approach of the share rent to the money rent, and is naturally the one suited to the better grade of tenants. In Europe other variations of the system are introduced by the apportionment of taxes between owner and tenant.

The subject of land tenure has become so important because of the connection between the payment of the rent, the energy of the cultivator and the productivity of the land, as well as because of the social consequences of land ownership. Under the feudal system there was an almost complete divorce between owner and cultivator. With the growth of prosperity the serf gradually became a free tenant, and in some parts of Europe the tenant has become a peasant proprietor or independent farmer. In Ireland the transition is still in process, and has been much facilitated by the series of laws which began in the seventies and culminated in the Land Purchase Act of 1903. In the United States, which was (except in the

South) almost from the beginning the home of independent farmers, there has been during the past few decades an increase in the proportion of farm tenants to farm owners. This is apparent from the following table :

Year.	Total Number of Farms.	Number of Farms Operated by			Per Cent of Farms Operated by		
		Owners.	Cash Tenants.	Share Tenants.	Owners.	Cash Tenants.	Share Tenants.
The United States.							
1900	5,739,657	3,713,371	752,920	1,273,336	64.7	13.1	22.2
1890	4,564,641	3,269,728	454,659	840,254	71.6	10.0	18.4
1880	4,008,907	2,984,306	322,357	702,244	74.5	8.0	17.5
North Atlantic Division.							
1900	677,506	536,724	66,361	74,421	79.2	9.8	11.0
1890	658,569	537,376	52,120	69,073	81.6	7.9	10.5
1880	696,139	584,847	49,011	62,281	84.0	7.0	9.0
South Atlantic Division.							
1900	962,225	536,627	172,699	252,899	55.8	17.9	26.3
1890	749,600	461,057	96,098	192,445	61.5	12.8	25.7
1880	644,429	411,673	74,946	157,810	63.9	11.6	24.5
North Central Division.							
1900	2,196,567	1,583,841	207,732	404,994	72.1	7.5	18.4
1890	1,923,822	1,474,086	147,248	302,488	76.6	9.7	15.7
1880	1,697,968	1,350,225	88,743	259,000	79.5	5.2	15.3
South Central Division.							
1900	1,658,166	852,620	286,091	579,455	51.4	17.3	31.3
1890	1,086,772	668,972	151,901	265,899	61.5	14.0	24.5
1880	886,648	565,556	105,092	216,000	63.8	11.8	24.4
Western Division.							
1900	242,908	202,596	18,782	21,530	83.4	7.7	8.9
1890	145,878	128,237	7,292	10,349	87.9	5.0	7.1
1880	83,723	72,005	4,565	7,153	86.0	5.5	8.5
Alaska & Hawaii.							
1900	2,285	963	1,255	67	42.1	54.9	3.0

It would, however, be a mistake to assume that the tenants are growing at the expense of owners. Both owners and tenants are increasing, even though the tenants are increasing

faster. In 1900 there was one farm owned for every 14 persons outside of cities of 8,000 inhabitants and over. In 1850 the ratio of all farms of whatever description to the population outside of such cities was precisely the same — 1 to 14. It is clear, then, the number of farms cultivated by the owners has grown faster than the non-urban population. This means that the increase of tenants has come not from previous farm owners or their families, but from previous farm hands or hired men. The growth of farm tenancy, therefore, is a step forward, not backward, in the condition of American agriculture. The burning problem in the South is whether the negro farmers possess or can be made to attain the qualities fitting them for successful tenant farmers rather than for laborers on the large plantations, which are again beginning to develop.

164. Justification of Land Rent.

The question of the justification of rent is one not of its existence, but of its disposition. Since rent is as much a part of the product as wages, to query the justification of rent is in one sense as unmeaning as to query that of wages. The rent which a tenant pays is fixed by economic law; whether he hands it to a private individual or to the government is immaterial so far as its existence is concerned. The point at issue is: who should get the rent, the individual or the government.

Private property in land rents is attacked from three sides. The communists assail it because they condemn all private property. The socialists assail it because they hold that the private control of any factor of production, except that of the laborer by himself, involves a robbery of the laborer. The land nationalizers and single-taxers assail it because of an alleged distinction between land and capital. Although the arguments of these three assailants are mutually destructive, we shall confine ourselves here to the last class, inasmuch as the arguments of the communists and socialists are not peculiar to property in land.

According to the single-taxers land rent is held to be a

monopoly privilege, and land value is claimed to be a social product. For both reasons the land would then be unsuited to private ownership.

In the first place, however, we have seen that monopoly cannot well be predicated of land in general. Worthless land exists in abundance. From the worthless to the priceless lands, however, there is a continual gradation, and it is impossible to say where relative abundance and competition stop and monopoly begins. Even, however, if the fact of privilege is substantiated, it is not competent to single out land. Many other privileges are granted by modern society. Patents and copyrights are exceedingly valuable, even if temporary, privileges. The institution of inheritance, whereby society confers upon individuals the right of receiving that for which they are in no wise responsible, is a privilege which in importance almost transcends that of property in land. Certain corporate franchises constitute privileges, the value of which may be only in part referable to the land. That all such privileges should be paid for is indeed a legitimate demand; but to claim that this payment should be extended to the point of the total value of the land would logically lead to the similar claim that the total value of all inheritances, franchises, patents and copyrights should be taken by the state.

Secondly, the assertion that land value differs from other values in that it is a social product involves the contention that the value of other things is an individual product. Individual labor, however, has never by itself produced anything in civilized society. Take, for example, the workman fashioning a chair. The wood has not been produced by him; it is a gift of nature. The tools that he uses are the results of the contributions of others; the house in which he works, the clothes he wears, the food he eats (all of which are necessary in civilized society to the making of a chair), are the result of the contribution of the community. His safety from robbery and pillage — nay, his very existence — is dependent on the ceaseless co-operation of the society about him. How can it be

said, in the face of all this, that his own individual labor wholly creates anything? If it be maintained that he pays for his tools, his clothing and his protection, it may be answered that the land purchaser also pays for the land. Nothing is wholly the result of unaided individual labor. No one has a right to say, "This belongs absolutely and completely to me because I alone have produced it." All value is a social product.

It may be contended, indeed, that the landowner does nothing, while the carpenter, at all events, does something. This can apply, however, only to the absentee owner of agricultural land or to the holder of city land. Under the modern form of corporate investment, moreover, even this distinction is robbed of much of its importance. Suppose that I invest my capital in land or in the shares of a street railway, a newspaper or a bank. At the end of ten years I return and find that land values have increased, but I also find that the same cause — the growth of population and prosperity — has equally enhanced the value of my railway, newspaper and bank stock. It is indeed true that the growth of the corporation calls for a continually abler manager, but the only contribution that I personally have made to the increased value may be a chance vote by proxy for a new board of directors. To all intents and purposes the increment is well-nigh as "unearned" in the one case as in the other.

It may nevertheless be conceded that there is a difference to this extent, that ultimately the ownership of the capital controls its management and conditions its most effective social utilization. This difference, however, does not suffice to convert all land values into "unearned increments" and to make the increased values of other things "earned." At best it can only justify a somewhat higher rate of taxation on land. The single-tax movement undoubtedly has a practical validity to the extent that it emphasizes the advantages of exempting certain classes of personal property from taxation for local purposes; but so far as it endeavors to abolish every other form of taxation, or so far as it purports to afford a solution of a

great social problem by confiscating land rents, it is sadly inadequate. Private property in agricultural land has been developed in the course of long centuries as the most effective means of spurring on the cultivator to the best methods, and thus uniting individual and social interests. To distinguish between the social and the individual causes of agricultural rent is impossible. The validity of agricultural rents, however, involves that of other land rents as well. It is only when the control of land by individuals becomes a distinct menace to social interests that its rigid regulation, or even its assumption by the community, becomes legitimate.

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CHAPTER XXV.

INTEREST.

165. References.

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166. Nature of Interest.

To the ordinary man interest seems to be the payment for a loan of money, precisely as wealth seems to consist of a sum of money. In point of fact, however, interest is paid for the use of the capital which the money represents. It is the earnings or product of the fund of capital, just as rent is the earnings of the individual pieces of capital. Interest is commuted rent, or the calculation form of rent. Just as a business man must deduct the rent or royalty of some patented machine used by him before computing his profits, so, if he buys the machine outright, he must deduct the interest on the capital invested in the machine. Whether he uses his

own capital or borrows it is immaterial; in the latter case it is loan or contract interest, in the former it is natural or economic interest. The distinction is the same as that which we have learned between contract and economic rent. Whether he pays the interest to another in virtue of some contract or keeps it makes no difference. The amount of interest, however, is not the same thing as what is usually called the rent of the particular machine. For the fund of capital is represented by many other concrete commodities besides machines. Total interest is always total net rent; that is, the total net product of the entire fund of capital must be the same as the total product of the aggregate of all the individual pieces of capital. But this is very different from saying that the interest on a thousand dollars is the same as the annual gross rent of a particular machine costing a thousand dollars.

This is due to the fact that rents and capital values of single commodities are as different as the commodities themselves. They run through the whole gamut of value from zero to well-nigh incalculable sums. Capital, as a fund, on the other hand, is a unit. Pieces of capital are heterogeneous; a fund of capital is homogeneous. There is no rate of rents or of capital values; there is a general rate of interest. Interest on a thousand dollars may be fifty dollars; a machine and a horse may cost a thousand dollars, and yet they may rent for very different sums because of their unequal durability. If all concrete units of capital were alike in productivity and if there was no question of durability, rent would always be the same as interest. It is precisely because individual pieces of capital are not alike that rent differs from interest, although total rent must always equal total interest.

The statement that capital as a fund is homogeneous must not be misunderstood. Two identical pieces of capital, let us say two machines, may yield very different products, because the one may be carefully looked after and the other badly neglected. In the same way equal amounts of capital may be

loaned to two persons, one of whom may be expected to repay promptly, while in the other case there may be a risk. Just as the two machines, although technically the same, are economically different, so the two individual sums of capital, although in one sense homogeneous because reduced to a fund of value, are yet economically and from the point of view of the lender different productive instruments or income-bearing agents. Actual interest rates on loans therefore fluctuate with the degree of security and the probability of repayment. Interest rates on land vary, for instance, with the ratio of the loan to the property. In New York City in 1905 a loan equal to one-half the assessed value of the land could be secured for four per cent, a somewhat larger sum for four and a half per cent, and about three-quarters of the value for five per cent. The rate of interest on bonds varies from slightly over two per cent on government loans to five, six or seven per cent on local or industrial paper of more doubtful security. When we speak of the fund of capital as homogeneous, we refer to the identity of potential use, not to the conditions of repayment. A study of the normal rate of interest is a study of natural interest, or the returns from the use of capital on the assumption of complete mobility, free competition and the presence of the economic motive. The fact that a person who has borrowed the capital and pocketed its earnings chooses not to repay all of it, will affect the rate at which that particular person or other persons of his class can in future secure a loan, but will leave untouched the normal rate of interest on good security. Risk causes a fluctuation from the normal rate of interest ; it does not affect the normal rate itself which is paid on capital when there is virtually no risk. So far, of course, as there is an element of risk in all human transactions, the cost of this minimal risk must be included in the rate of interest. But in ordinary "gilt-edge" loans this may be practically disregarded.

Interest rates not only fluctuate on loans to different individuals or classes, but vary in different sections or parts of

the same country. This is, however, so obviously an illustration of the fact that we are dealing with different markets as to need no further elaboration. A study of interest rates, like that of all other cases of value, refers to conditions in a given market. If the study discloses the general principles of value in a market, it will be adequate to explain the relative variations in different markets.

Another seeming exception to the principle that interest is the earnings of a homogeneous fund of capital is afforded by interest rates on "call loans" in financial centres,—that is, on loans which may be called or terminated at will, as opposed to ordinary time loans. The general rate of interest in New York may be four or five per cent, but in the parlance of Wall Street "money may be worth" on a given day only one or two per cent when "it is a drug on the market," and may at another time "be so tight" as to command an interest rate of several per cent a week or several hundred per cent a year. The explanation is not difficult. Interest in general is paid for a fund of capital, because that fund ultimately represents some concrete pieces of capital that afford a service. The manufacturer invests the capital in new machines or buildings, the merchant in new facilities of transfer, the farmer in more land or better implements. In the case of Wall Street, however, what is wanted is not capital for technical production, but capital in the form of liquid assets or a disposable surplus of cash to meet current liabilities. The ordinary rate of interest depends upon the demand and supply of capital for productive purposes; the rate of interest on call loans depends on the demand and supply of the fluctuating mass of loanable funds which are on the instant convertible into cash. The rate of interest on call loans may be high when the general rate of interest is low. In the case of call loans the payment is for the temporary use of the money considered as a commodity in itself; in the case of ordinary loans the payment is for the use of an aliquot part of the social capital of the community.

167. Interest and Forbearance.

We have learned that the real value of all things consists in their rents or actual uses and that the fundamental aspect of value is rental value. We have also learned that rental values are transmuted into capital values, and that capital value depends upon a succession of anticipated income or rental values. Finally, we have learned that this process of capitalization, or of estimating the present worth of a succession of future uses, depends upon the fact that men habitually put a lower present estimate on future uses than on present uses. Interest thus involves a discounting of the future and is a natural phenomenon because it represents a natural discount. It corresponds to the difference in the time utility of things, as actual rents or usufructs correspond to differences in material utility.

In the case of more or less durable articles of consumption, we can postpone or wait for each use or service as it recurs; or we can dispose now of all its expected future uses by selling it outright. Obviously there is a disadvantage in waiting because the present satisfactions that we could buy are more keenly appreciated than these future satisfactions. In paying us a capital sum, therefore, the purchasers or actual consumers will insist on a reward for their forbearance. We can invest the money in something that can be consumed at once; they must wait for each recurring service or use of the commodity now in their possession. (As the future changes into the present, each use of the commodity will afford them a definite satisfaction; but at the present moment the actual value of each anticipated future use is somewhat smaller than will be the value of that use when realized. This difference or discount is the reward for forbearance, that is, for postponing present satisfactions.

Articles of consumption, however, must be replaced. A stock of consumption goods can continue or increase only through the means of production goods. If things are used

for productive purposes, their capital value must be explained in the same way as that of consumption goods. The person who has created a piece of capital must be rewarded for his waiting. Instead of consuming everything now, he prefers to put a part of his energies into producing something which will last, and will help him in the future. He postpones his gratifications, he waits for the future rents or earnings of this thing that now has a capital value, because it capitalizes the anticipated rents or earnings. As these future earnings become with the lapse of time present earnings, they acquire a greater value,—greater by the amount that a present satisfaction exceeds a future satisfaction. When a man puts his capital into a savings bank or into a business or into a concrete commodity, the aggregate of earnings or services as they mature exceed the present capitalized worth of those earnings. The capital, as it is said will earn (in the future) a surplus over its present (capitalized) value. If he keeps the capital, this surplus will accrue to him; if he loans it, the borrower must pay him the surplus which will have been earned by the time that the capital is repaid. If we own a boat and rent it out, it may bring in \$150 before it is finally discarded after a dozen years; but if we sell it now it may fetch only \$80. The difference, or \$70, is the interest or surplus reward which accrues to us if we wait for the future earnings to come in. (As the future uses or earnings ripen into present earnings, they acquire an enhanced value.)

To say, however, that interest is the reward of forbearance does not suffice. We must remember that all price depends on marginal utility. We are always comparing one kind of enjoyment with another, and the increments of satisfaction diminish with the supply until we reach a certain point or margin where the increment of satisfaction afforded by a given service or commodity is overtaken by that afforded by another. When, therefore, we compare present with future satisfactions, we are really comparing marginal increments of enjoyment. Our present estimate of each successive future use of a com-

modity diminishes as that use recedes into the future ; but the extent to which we are willing to refrain from present consumption depends on the relative amount at our disposal. If we have a large quantity of a commodity or a large sum of money with which to buy it, we can consume only a small portion now, and may be quite ready to lay by the rest because it does not involve any perceptible sacrifice. With every diminution in the amount at our disposal, however, the greater will be the importance which we attach to present satisfactions, and the more remote will appear the advantage of saving for the future. Finally, a point will be reached where these two considerations balance each other, and where we shall be on the margin of doubt whether to save or to spend. Beyond that point we shall surely not save, because we secure more satisfaction from present enjoyment.

When, therefore, we say that interest is the result of forbearance, we really mean that interest is the result of marginal forbearance, or forbearance at the margin. The disadvantage of waiting, which is the essence of interest, is the disadvantage of waiting at the point where we get ready to substitute one kind of enjoyment for another. This marginal point will indeed be a different one for the rich and the poor, for the spendthrift and the miser, but this difference will affect the rate of interest as little as the relative wealth of the purchaser affects the price of wheat on the exchange. The value of wheat is the expression of its marginal utility to the wheat-using group ; the interest on capital corresponds to the difference in the marginal estimates of present and future uses for the whole capital-using group. Value in the market is social value (§ 74).

Interest, then, is not simply the discount between present and future enjoyments in general. There would indeed be no capital if there were no saving, but all saving does not involve a sacrifice or disadvantage. People would save something even if there were no interest. A prudent man knows that he will need something for a rainy day ; a far-sighted man

may even believe that the future social demand for a commodity or service will grow, and he would then save or accumulate the particular capital even if there was no reward in the form of interest. For if he is right, it will be worth more to him in the future than it is at present. But when a man saves or accumulates capital, he would, if there were no interest, soon reach a point where his gains from accumulation would be overtaken by his loss in foregoing present enjoyments for future satisfactions. This would be the margin or final point where he would stop saving or capitalizing. Interest therefore is the discount between present and future marginal increments of enjoyment; that is, interest is the measure of the marginal disadvantage of forbearance.

Moreover, since at this margin men are constantly comparing the service of one commodity with that of another, interest is the return for awaiting not simply the future service of some particular piece of capital, but that of any other piece of capital which may be substituted for it. In other words, the rate of interest depends on the difference between the actual estimate of the present and that of the future services of the whole mass of capital at the margin, that is, of the marginal increments of the entirety of capital.

168. Interest and Productivity.

It is obvious that unless a commodity afforded some services or earnings there would be no use in waiting and no advantage in forbearance. Instead of centring our attention upon the forbearance we may equally well turn our consideration to the future services which capital will yield. In lieu of looking at the problem from the point of view of waiting for the service, we may approach it from that of the capital which affords the service. As soon as we do this, we face the problem of productivity.

Particular pieces of capital are undoubtedly productive. An axe enables us to secure a greater result than if we used our hands. A machine utilized by a laborer produces more than

the labor alone could produce. If particular pieces of capital are productive, capital as a whole must be productive. If the commodity no longer affords a service, it will lose its value as a piece of capital, that is, it will no longer be capital. Conversely, capital will be accumulated because of the earnings to be derived therefrom. When we speak of capital, we inevitably think of the earnings of capital.

Owing to the law of diminishing returns, there is a limit to the profitable use of particular pieces of capital. If a given force of workmen had previously used only their hands, and if a machine is introduced, like a loom, the product will be at once increased. If the single loom does not occupy all the time of the workman, more will be introduced, until with say ten looms each workman is fully employed. The addition of an eleventh loom will still increase the product, but the addition will not be so great as before the point of maximum utilization had been reached, because the workman cannot tend each loom so carefully. A twelfth and thirteenth loom will add continually smaller products, until finally an additional loom will add nothing at all. Now, since every loom is as good as the other, the earnings or the productivity of each is at any given time measured by that of the last or marginal loom employed. If there are ten looms, the contribution of each is equal to that of the tenth; if there are thirteen, the contribution to each is equal to that of the thirteenth. The earnings of the marginal loom, that is, its additional contribution to the product, is its rent, and if the looms are hired from the owner, the money rent paid to him for each loom will be equivalent to the marginal earnings, that is, the earnings or contribution to the product of the marginal loom. If the entire capital of the community consisted of looms, the annual product of the looms would be the gross return of the capital invested in looms; and this product, less the cost of repairing and replacement, would be at once the net rent and the interest.

The total capital of a community, however, is composed of

other things than looms. Capital as a whole includes all the concrete pieces of wealth. When we borrow a thousand dollars, we secure the opportunity of embodying that sum in any individual piece of concrete capital. That sum has a value because it is productive, in the sense that it can at once be incorporated into something that yields a product. Since individuals are constantly competing for the privilege and are substituting different embodiments of that fund of capital according to their estimate of the returns to be derived, it is clear that at any moment the productivity of the entire mass of capital in existence is measured by that of the particular piece of capital at the margin of employment. It may be a loom or anything else. Productivity of the fund or aggregate of capital means marginal productivity.

This margin of employment, however, is not simply the margin of indifference as between various pieces or increments of capital; it is also a margin of indifference as between the various productive factors in general. Owing to the same principle of diminishing returns, the United States Steel Corporation must continually consider whether it pays better to add another machine in a given mill or to burn more coal in order to speed the machines faster; whether it is more advantageous to put additional capital into that particular mill or into the steamers which transport the product to the market. In the same way they must consider whether it pays better to crowd more machines into the same mill or to acquire more land and build a new mill. Finally, they must consider whether it pays better to increase the labor force for the purpose of getting more work out of the same machines, or to increase the number of machines. Every practical business man realizes that there is such a margin of indifference, beyond which an additional application of capital will not yield as great returns as an additional application of labor, or *vice versa*.

What is true of the individual is equally true of society. The total capital in a given market is constantly competing with the total supply of other productive agents. The margin

of employment which tells in the determination of the normal rate of interest is a social margin. All the individual pieces of capital are reduced to terms of money, and the fund of capital in any market is the capital value of all the single pieces of capital. The marginal productivity of this fund of capital is the earning capacity of the increment embodied in the particular piece of capital employed at the margin. That particular increment of capital will yield a certain return, and that return or addition to the capital constitutes interest.

When we have free competition and complete mobility of capital, any increment can earn only as much as the marginal increment, for, since they are interchangeable, any increment at a given time may be considered the last or final one. Interest is the addition to itself which the capital in a given market earns at the point of marginal utilization. Interest, in other words, is the product of the marginal increment of capital.

It makes, therefore, really no difference whether we say that interest is the measure of marginal productivity or the measure of marginal forbearance. They are two ways of stating the same fact, just as we know that the value of all things may be expressed in terms of marginal utility or of marginal sacrifice. When we speak of the productivity of capital, we think of utility; when we speak of forbearance, we think of sacrifice. Interest, like all value, may be explained in terms of one or of the other, for marginal increments of utility and of sacrifice tend to be equal. When, however, we say that the marginal increment of capital employed at any given moment yields a certain return, we must not forget that in a deeper sense it is not the piece of capital which creates the product or interest, but that it is the product or interest which is responsible for the capital. Capital value is the reflex of the value of the anticipated services. Capital is capitalized income.

169. Course of Interest.

Since interest is the measure of marginal productivity and marginal forbearance, the actual rate of interest depends on the location of the margin. Like every other margin, this is a result of an equilibrium or balancing of economic forces.

It is obvious that in early stages of development the margin is high. There is a great scarcity of capital; and it assumes the form chiefly of the rudest kinds of implements which cost but little time and labor to create. The margin of indifference is a high one, and therefore the marginal productivity of capital, that is, the rate of interest, is high.

As capital accumulates, the margin recedes. While the growth of capital augments prosperity, the product ascribable to each individual piece of additional capital is smaller than before. At the new margin where men are debating whether to spend or to save, whether to work for current needs or to work harder for future needs, the same result can be secured only by greater labor. The marginal piece of capital, in other words, has a lower productivity. The rate of interest falls, because the capital employed at the margin produces less for itself, that is, adds less to itself. The addition to itself at the margin is the rate of interest.

In so far, hence, as progress means the continual multiplication and improvement of capital, it implies a steady reduction in the rate of interest. Capital develops not only in quantity, but in quality. We have not only more pieces of capital, but better ones. The clumsy tools are replaced by fine machines, the log house gives way to the sky-scraper, the wheelbarrow to the electric locomotive. The total product, that is, the aggregate wealth of the community, augments, and there is such an increase in the number of increments of capital that at the margin, where the final increment of capital is employed, the selling value of its product will be less than before. Prosperity depends upon total product, but value depends upon marginal product; the marginal product of

capital decreases, while the total product of all the capital increases. The rate of interest falls because the margin of employment falls; but as the margin falls, the quantity of capital grows, its quality improves and wealth increases.

According to the recent researches of Billeter, the normal rate of interest on good security during the period of greatest prosperity in Athens was about 12 per cent; while in Rome at the close of the republic it had fallen to between 4 and 6 per cent. Starting in again during the early middle ages at a rate of 20 per cent and 15 per cent, it gradually fell, until in the great financial centres of Holland toward the close of the eighteenth century it reached a rate of between 2 per cent and 3 per cent. Since then the rate has again risen, for reasons to be mentioned in a moment.

It would be a mistake to assume that the margin is fixed simply by the alternative returns from land. It is true that where land is abundant, and land rent therefore low, the rate of interest is high. It is equally true that one of the causes responsible for the rise of interest has been the opening up of vast stretches of cheap land in the New World. As the margin of cultivation moved outward, the same piece of capital applied to the land yielded larger results; that is, the margin of the productivity of capital moved upward, and the rate of interest moved with it. But changes in the productivity of land are not the sole factor in affecting the productivity of, and therefore the demand for, capital. If labor should become less costly, the margin would also move up. Just as in the preceding case a unit of capital would produce more when applied to a given quantity of less expensive land, so now a unit of capital would produce more when used in conjunction with a given quantity of less expensive labor. The only difference between the two cases is that the lower cost of land would mean a lower land rent, while the lower cost of labor might mean either lower wages or, when lower cost is due to greater efficiency, higher wages. During the past century, for instance, one of the reasons militating against a fall in the rate

of interest has been the increased productivity of capital due to the lower relative cost of labor, whether the new capital has been used in Java with the low-wage peasant, or in America with the high-wage factory hand. The consideration of wages, however, must be deferred to the next chapter.

The location of the margin may be affected not only by changes in the relative productivity of other factors of production, but by changes affecting capital itself. Continual improvements in capital undoubtedly increase general productivity, but as qualitative improvements in pieces of capital are subject to the law of diminishing returns, their introduction is normally accompanied by a decline in the rate of interest. In Japan as in the Canadian Northwest interest rates are rapidly falling, although fresh land is scarce in the former, and abundant in the latter, country. In the same way the moving force may come from the side of demand or forbearance rather than of supply or productivity. The general state of society may affect the readiness to postpone present for future gratifications. When the Filipinos complain of a scarcity of capital, they forget that the social and political conditions have been such as to discourage the sense of saving. The true education for the Filipino, as it is for the Negro, is to inculcate such habits of mind as to augment the readiness to forego present satisfactions. Whatever does this lowers the margin and leads to a fall in the rate of interest.

170. Tendency of Interest to a Minimum.

A gradual decrease in the rate of interest is normal as well as beneficial to the community. It lowers cost and enhances prosperity. It would, however, be an error to conclude that this tendency is constant, and that the interest rate will disappear or even reach a bare minimum. For, as the rate approaches a certain low point, it sets in motion forces to prevent any further reduction. This can be approached from two points of view.

The first consideration is the unlimited potential capacity of

modern society to utilize capital. A low interest rate, say three or four per cent, is possible only in a community amply supplied with capital. In such a complex society the demand for a greater control of the conveniences of life is virtually insatiable, and individuals and government alike will be deterred from entering upon ever larger schemes of permanent improvement and investment only by the consideration of cost. If the rate of interest should conceivably fall so low that the cost of capital might be neglected, it would lead to a well-nigh incalculable multiplication of durable commodities. Every city would be pierced by innumerable subways, railroads would be more common than country paths, laborers would live in palaces and all other fairy flights of the imagination would be realized. This very statement is sufficient to show its absurdity. Capital could be costless only if the concrete pieces of capital cost nothing. But we know that while progress is constantly reducing the cost of some things, the fall in price engenders a production of new things, previously non-existent. As long as human labor involves some sacrifice and human demands are illimitable, there will always be some things that cost labor.

If individual durable things, however, cost something, capital as a whole can never become costless, like air or water. The reduction in the cost of some forms of capital will at a certain point be balanced by the rise in the cost of new forms of capital which formerly did not exist and therefore had no cost. As long as invention keeps ahead of demand, cost will fall; but with every reduction in cost demand increases, and when demand can no longer be satisfied by an increase in the supply, when, in other words, the law of diminishing returns has made its influence felt, any serious reduction in the aggregate cost of capital is impossible. Putting it in another way, we may say that after a certain point has been reached any additional decline in the interest rate will mean a more than proportionate increase in the demand for capital, and this augmented demand which cannot be met by any corresponding

decrease in cost will prevent any further reduction in the rate. As capital becomes more abundant, its marginal productivity in terms of value will decrease, but the decrease itself will be arrested at a certain point. So far as experience seems to show, this point means a rate of between 2 per cent and 3 per cent.

The same result can be reached by approaching the problem from the other side, that of marginal forbearance. The readiness to accumulate capital depends on the comparison between present and future estimates. The accumulations of a very rich man as well as of a very poor man are apt to be only slightly affected by an unduly low rate of interest,—the very rich man because he cannot well help accumulating, and the poor man because he has so narrow a margin for saving of any kind. In the case of the ordinary man, however, who is really responsible for the growth of capital, the matter is different. It is not utterly arbitrary to assume that a man in moderate circumstances will commonly be willing to restrict his expenses and lay aside annually a sum about equal to that which he expects to enjoy as income in the future. The time required for accumulating a capital which will yield such an income will be, at 6 per cent interest, 12 years; at 3 per cent, 24 years; at 2 per cent, 35 years; at $1\frac{1}{2}$ per cent, 47 years; at 1 per cent, 70 years.¹ If the interest rate falls from 6 per cent to 3 per cent, the reward, even if smaller, will still be worth while, and in order to provide himself with an adequate income the individual may accumulate larger capitals than before. But if the rate falls to $1\frac{1}{2}$ per cent he will seek to secure the future income in some other way without accumulating a capital. Nowadays he would go to an insurance company and buy an annuity, and even if he wishes to purchase an annuity to last long enough to include the life of his children, the advantage of an annuity which at a high rate of interest is exceedingly slight becomes more and more substantial as the rate of interest declines. With a change in the above figures,

¹ Cassel, *The Nature and Necessity of Interest*, p. 146.

the conclusions will of course vary; but in any event, taking the practice of the ordinary man, it is susceptible of a reasonably legitimate calculation that the rate of interest cannot fall much below 2 per cent, because otherwise the desire to accumulate would be effectually checked. While precise figures are manifestly impossible, it seems that the margin which fixes the rate of interest thus stands in a close relation to the length of human life. If human longevity were to increase, the possible minimum in the rate of interest might be far lower than is likely to be the case under present conditions.

171. Regulation of Interest.

Interest therefore, like rent, is a natural phenomenon, which must exist wherever private property in durable quantities is found. Yet until recent times government has always attempted to restrict the rate of interest.

At the outset, when the function of capital was not comprehended, interest was considered a return for the use of money. Since the chief function of money was held to be its use as a medium of exchange, any compensation, other than the transfer of the thing exchanged, was deemed unjustifiable. The price of the use — the *pretium usus* — was usury, *usura*, and wholly indefensible. Usury and interest were synonymous, because the use for which a price was paid involved an interval of time “between” (*interest*) the loan and the repayment. Yet although seemingly unjustifiable, the exigencies of business life compelled the borrower to make some payment if he desired to induce the lender to part with his property. Public opinion began to recognize the legitimacy of some moderate return to the lender, primarily as a compensation for risk. The wedge was gradually pushed further in, until a distinction was drawn between the legitimate return, now called interest, and the illegitimate surplus known as usury. Legislation no longer prohibited all interest, but only excessive interest. Yet the legal rate of contract interest was changed from time to time as the natural rate declined.

The development of modern capitalism and the recognition of the fact that interest is paid for the use of capital rather than for that of the money representing the capital, have led during the last half-century to the final stage,—the abolition of usury laws. The modern theory rests on the conviction that freedom of loans enures to the interest of the borrower as well as of the community. To prevent the lender from securing the market rate is to curtail the offer of capital, to restrict the process of accumulation and to increase the price, open or secret, which the borrower must ultimately pay. With free competition and complete mobility of capital, which are the characteristic features of modern business life, the lender will get only what his capital actually earns ; the contract or loan interest will approximate the natural interest. The usury laws still found in some of the American states are an anachronism.¹

It must, however, not be forgotten that this defence of freedom in borrowing rests on the assumption which underlies all liberty, namely, relative equality in bargaining. Where the loans are for immediate consumption rather than for productive purposes, and where even in productive loans there is such a glaring discrepancy between the lender and the borrower that the former is able to take an unfair advantage of the latter, the

¹ England abolished the usury law on short-time commercial paper in 1839, on all except real estate loans in 1850 and on all loans in 1854. The other European countries, except France, followed during the next fifteen years. In the United States usury laws are virtually unknown in fourteen states—in nine of the Western states they never existed, in four of the New England states and in Louisiana they have been substantially repealed. In the others usury is still illegal, with various penalties. In seven states the lender is disqualified from collecting the illegal excess ; in nine the whole interest is forfeited ; in four both principal and interest are forfeited ; in three double the interest is forfeited ; in one three times the interest is forfeited. Most remarkable of all is New York, where the penalty includes not only loss of principal and interest, but also a fine of \$1,000 and imprisonment for six months. This, however, was so manifestly absurd, that in 1882 call loans were exempted from the law. In practice, of course, all other loans are equally exempt. Corporations, moreover, are inhibited from availing themselves of the usury law as a defence.

reason of the rule falls away and some degree of protection may be needed for the borrower. This is recognized in the recent laws of both England and Germany, where provision is made for such exceptional cases.¹ In the overwhelming majority of instances, however, modern business loans rest upon the equality of business opportunity and the free competition of capital. Under such conditions usury laws are futile and worse than futile, because they either tend to evasion or become a drag on industry.

¹ The English act of 1900 permits the courts to reduce the interest or other charges if satisfied that the charges are "excessive and that the transaction is harsh or unconscionable." The act applies only to "money-lenders," excepting from the definition pawn-brokers, bankers, friendly, loan and building societies.

CHAPTER XXVI.

WAGES.

172. References.

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173. Nature of Wages.

Wages are the remuneration of labor. They are paid for the services of human beings, as rents are paid for the services of things. When we contrast wages with prices, we use the latter term in the sense of the capitalized value of commodities; but if by price we mean value in the market, wages are a price just as rent and interest are prices. The law of wages must be like that of rent and interest, for the law of all price is the same.

Wages, however, differ in some respects from rent and interest. Interest is the price paid for the use of an aliquot part of a homogeneous fund, and the small discrepancies in the

interest rate at any given time and place are due to the element of risk. Net interest is always the same in a given market. Wages, however, vary with the kind of labor. The wages of the skilled workman are higher than those of the unskilled; the wages of the foreman shade into the salary of the manager. Interest is homogeneous, wages are heterogeneous. On the other hand, wages differ from rents. Rents vary from zero to prodigious sums: the rent of a leased railroad may be millions of dollars, the rent of a worn-out row-boat may be next to nothing. The rents of some things may approach the vanishing point either because the things themselves are from the start of extremely little use, or because the originally valuable things are now fit only for the scrap heap or the junkman. Human beings, on the other hand, must live. The recompense of labor must be large enough to enable the workman at least to exist. Wages therefore cannot fall below a positive minimum which is absent in the case of commodities. Moreover, while wages are paid for mental as well as for physical work, the socially significant problem of wages is that of the manual laborers, and with them the gradations in labor are slight compared to those in the great mass of commodities. Hence, while the assertion of a general rate of rents is unmeaning, we do speak of a general rate of wages. It is not a general rate in the sense of a general or single rate of interest. But it is general in the sense that it varies comparatively little as between a substantial minimum for the bottom grade and a not very much greater return for the higher grades of those laborers whose numbers are of importance. Wages therefore in their social significance occupy a position midway between homogeneous interest and heterogeneous rents. In one sense wages vary like rents; in another sense there is a rate of wages like a rate of interest.

There is still another sense in which we can speak of a general rate of wages. When values are measured in terms of money, we use the term general level of prices. Wages as well as prices may be high or low. This connection between

wages and money leads to a distinction of some importance ; namely, between money wages and real wages. Money wages are actual wages paid in money ; real wages are the actual commodities that the money wages can buy. If prices of food, clothing and shelter rise faster than the price of labor, real wages will fall although money wages rise. The employer's interest is in money wages ; the laborer's interest is in real wages. The employer compares what he pays with the product ; the laborer compares what he receives with his expenses.

Wages, again, although they are undoubtedly prices, may yet be usefully contrasted with the prices of things. Labor is a commodity in the sense that everything which has a price is a commodity. Labor, however, is a peculiar kind of commodity. The chief peculiarities are four in number. (1) Commodities are produced for the sake of the services which they render. The increased supply of human beings is not due to any such consideration. Under slavery, where a man was a thing, human beings were kept for breeding purposes ; but in a state of freedom this consideration disappears. It is true, as stated above (§ 26), that the poor often look forward to their children as so many additional supports to the family. But he would be rash indeed who would assert that this is the motive of the increase. Commodities are produced for certain ends ; human beings are ends in themselves. (2) A commodity once in existence continues to give its services unbidden ; a laborer may work or not, as he lists. The commodity takes no holiday and does not strike. The mule and the slave respond to the lash ; harsh treatment of the workman may diminish rather than augment output. (3) Labor is perishable, while many commodities are durable. After the lapse of a certain time the laborer must sell his labor or starve. Laborers and capitalists need each other, but under normal conditions the need of the laborer is more urgent. (4) Finally, labor is inseparable from the laborer, while the commodity may be separated from its owner. Commodities are sold

wherever the owner desires ; labor can be sold only where the laborer is. The owner of commodities may stay where he likes and send his commodities where he finds a market ; the laborer must accompany his labor to the market. The one is in this respect free, the other unfree.

It is therefore not necessary to resort to obvious ethical considerations in order to recognize the difference between human beings and inanimate objects. The economic contrast is a result of man's personality, but it is none the less an economic contrast. The service of a material good is a commodity, and the good itself is wealth ; the labor of man is a commodity, but man himself is not wealth. The things exist for the services which they afford, but man does not exist for wealth ; wealth exists for man. The price of labor, like the price of everything else, is the result of economic forces, and of economic forces alone ; but labor is such a peculiar kind of commodity that the economic forces are present in different proportions and thus affect the result differently.

174. Wages and Cost.

After these preliminaries we are prepared to attack the problem of the law of wages. The most common statement is that wages depend upon supply and demand. In the sense that all value depends upon the equilibrium between supply and demand, this is true enough ; but unless we analyze the forces affecting normal supply and demand, the statement is of little use. In the way in which it is usually framed, moreover, the assertion leads to false implications. When the ordinary man speaks of demand and supply in reference to labor, he thinks only of the market variations rather than of the point about which the actual rates oscillate. Demand and supply, as commonly understood, afford a proximate rather than an ultimate explanation. As soon, however, as normal demand and supply are meant we are confronted by other causes.

The earliest attempt to supply this more ultimate explanation was the cost, or cost of production, theory of wages.

Market value, it was said, depends upon demand and supply, but in all reproducible commodities normal value is fixed by cost of production. Labor is a reproducible commodity, and therefore its value must be fixed by its cost of production. The cost of production of labor, however, is the cost of perpetuating a supply of laborers. Since the only restriction on population was supposed to be the bare possibility of supporting life, it was held that the supply of laborers would increase up to this point of the minimum of subsistence for each. The rate of wages, therefore, always tends to be at the bare minimum of subsistence, and the cost of production theory becomes equivalent to the minimum of subsistence theory. Sometimes this is also called the iron law or the brazen law of wages, because of the assumed rigidity of the principle.

This theory was defective in two points. In the first place in its identification of labor with a simple reproducible commodity it neglected the possibility of such an automatic check to population as would in any progressive community result in a certain higher level below which labor will not be carried on. Secondly, it committed the error, common to all the early economists, of holding that price is fixed by cost of production, whereas we know that the relation is more indirect. In the face of the constant rise of wages during the nineteenth century coupled with a still greater increase of population, the minimum of subsistence theory of wages finally broke down.

A variation of the same doctrine was the wages-fund theory. This rested upon the three premises, first, that wages are paid out of capital; second, that the amount of capital available at any given time for such payment of wages is predetermined and fixed; third, that the greater the number of laborers, the smaller the share of each. The conclusion was that since laborers can influence only their own numbers and not the predetermined amount of capital, all independent efforts to improve their position by collective action are futile: the sole method for the laborer to increase wages is to keep down population. Any interference, moreover, on the part of

government with the profits of capital will diminish the wages fund and thus decrease wages. As one of the more popular writers put it: "Labor is a commodity. If men will marry and bring up children to an overstocked and expiring trade, it is for them to take the consequences. If we stand between the error and its consequences, we stand between the evil and its cure ; if we intercept the penalty, we perpetuate the sin."

Further reflection showed, however, that each of the three premises of the wages-fund doctrine was vulnerable. (1) Wages are not paid out of capital ; they are only advanced out of capital. They are paid out of the product. Labor, like capital, earns its own remuneration. They may co-operate to effect a certain result, but the wages are not paid out of the capital in any different sense than the interest or profits are paid out of the labor. Both are paid out of the joint product which they create. (2) There is no such rigidity in the available amount of capital as is assumed. The capital applied to production is as susceptible of increase as is the labor force. Both are at any given moment elastic quantities. Increase the remuneration of either, and the supply will grow. (3) Finally, to affirm that the rate of wages is a quotient to be arrived at by dividing the dividend or wages fund by the divisor or number of laborers, and that wages hence rise or fall merely with the changes in population, rests not only on the error of considering the dividend as fixed, but upon the neglect to remember that the laborers make a contribution to the product and thus increase the sum to be divided.

With the breakdown of both the minimum of subsistence and the wages-fund theory of wages the way was prepared for the modern doctrine.

175. Wages and Efficiency.

In order to reach a consistent theory of wages we must revert to fundamental principles. All things possess value because of the services which they render. The value of all production goods depends on the value of the consumption

goods. If the price of iron products falls, the price of iron ore will fall. Production goods, however, are composed not only of concrete objects but of labor. Labor, therefore, has a value because its services or products have a value. If the labor is misspent, the product is valueless, and in the long run the labor will be equally so. Labor secures a remuneration because it produces something for which people are willing to pay. In other words, wages depend on productivity.

The value of labor, however, like the value of all things, is affected by marginal increments. If a man applies his labor to land which is so abundant that it can be had for the asking, there will be no rent of the land, and the value of the entire product will consist of wages. By increasing the number of workmen, the product may be more than proportionately increased, because the plot may be large and several laborers in co-operation may accomplish so much better results that the share of each will be greater. After the point of maximum utilization has been reached, however, the law of diminishing returns will assert itself, and each additional laborer will add relatively less to the product, until if the process were continued long enough a new laborer would make no addition at all. The process will never actually be carried to this point, since the object of activity is the attainment of some result; if there is no result, the activity will cease. At any given time, however, there is always a final or marginal workman who is making some contribution to the product. If there is free competition and if all the laborers do their allotted task equally well, so that there is no choice between them, the share of the product ascribable to any of the workmen must be equal to the additions made by the last or marginal laborer actually at work. Since the value of the entire product is here due to labor, the rate of wages is equal to the product of the marginal laborer. Wages depend upon marginal productivity.

If, instead of operating with a given piece of land, the laborer were to utilize a given quantity of capital, the result would be the same. Suppose that the labor is applied to a

given quantity of looms. The total product here indeed is not wholly due to the labor, because the looms cost something, whereas the land was so plentiful that it cost nothing. The share of the product due to the looms, however, is equivalent to the interest on the capital invested. If the number of looms remains fixed and there are no changes in the demand, each additional workman will add an increasingly smaller increment to the total product; and the share of the product at any given time due to the labor will, as before, be equal to the contribution made by the workman that is employed at the margin. What he earns sets the standard for all the others.

In actual life, indeed, the quantities of land and capital are fixed just as little as is the number of laborers. The marginal employment of laborers will therefore depend not alone on the amount of labor, but on the amount of the other productive factors. For these are all competing with each other. At a certain point in the process of increasing the number of workmen on a given plot of land it will be more profitable to use more land instead of more workmen; and as the better land acquires a value, a part of the product will consist of land rent. In the same way at a certain point it will pay better to use more looms, so that an increasing part of the product will consist of the rent of the looms or of the interest on the capital invested in the looms. Since the looms occupy space, the product will be divided into land rent, interest and wages. And if there are continual temporary changes going on, a part of the product will take the shape of profits to the entrepreneur. All this, however, although it may obscure, cannot prevent, the fact that there is always a point of marginal employment of labor, and that at this margin there is a certain part of the product ascribable to labor. The normal rate of wages, that is, the amount to which wages tend to conform under conditions of free competition and mobility of both capital and labor, is the amount of value which a given increment of labor produces at the margin.

176. Rate of Wages.

It may be claimed that the productivity of anything at the margin depends on relative scarcity. Scarcity, however, connotes supply, and the supply of labor, like that of other things, depends on cost of production. Are we not then, after all, really coming back to the cost theory of wages?

The cost theory, however, can no longer be stated as the minimum of subsistence theory. The cost of living at any given time is affected by the standard of life. With the progress of civilization and the alteration of human wants, the standard changes. The standard of the Chinese coolie differs from that of the American workman; the standard of the farm hand from that of the factory operative. When the cost theory of wages is couched in terms of the standard of life theory it loses its pessimistic connotation. For if wages vary with the standard of life, anything which lifts the standard will raise the rate of wages.

In reality, however, the standard of life cannot accomplish the impossible. The highest standard will not prevent wages from falling in the face of a decrease in the demand for the product and a decline in industrial prosperity. If the employers cannot sell their product at a given price, they must lower cost or abandon the business. From this point of view the cost of labor is like the cost of anything else; it must adjust itself to the price. As was said by Longfield three-quarters of a century ago, the wages of the laborer depend upon the value of his labor and not upon his wants.

The standard of life theory and the productivity theory may thus be declared complementary. They are both true in the sense that the cost and the utility theories of value are true. But while marginal utility tends to equal marginal cost, we know that the ultimate explanation of value is to be found on the side of utility and that marginal cost adjusts itself to marginal utility. Cost seems to be the cause of value, but is in reality a measure rather than a cause. So, in the same way,

marginal productivity (that is, marginal efficiency or utility) is the *causa causans* of the rate of wages, while the standard of life (or marginal cost), which seems to be cause, in reality adjusts itself to the productivity. The rate of wages may be expressed in terms of either, but the positive force is productivity.

The standard of life, however, is of exceedingly great importance. It often serves as a dyke to prevent for a time at least the inundation of the field. It is here that the contrast between men and things is apparent. With ordinary commodities, a new-comer who can produce the same goods at lower cost will reduce the price. With labor, if the cost, that is, the standard of life, has become a customary one, the new-comer will not be so apt voluntarily to submit to a lower standard. To the ordinary producer low cost of the product means high gains; to the laborer low cost of the product, that is, low wages, means low gains. It is only where the new-comers are habituated to a lower standard and where the exigencies of the situation force them to accept the smallest sum the employers will give, that the real difficulty arises. Thus women's wages are frequently lower than men's, not only because in some occupations women produce less than men, but also because, even where the product is the same, the woman's standard of life is lower, in that she is generally not the support of the family and is often not entirely dependent on her earnings. In the same way the immigrant receives lower wages than the native workman, not only because his contribution to the product is frequently less through ignorance or lack of skill, but because his standard of life is so much lower that he will be willing to work for less—at least until he becomes educated up to the new standard of life.

177. Course of Wages.

Since wages are fixed by the value of the marginal increment of labor employed, changes in the normal rate of wages depend upon changes in the location of the margin. These

changes may take place on the side of labor or on that of the other factors of production.

Anything which tends to enhance the productivity of labor in itself will increase the product of the marginal unit and thus raise the rate of wages. Education, the development of mental and moral vigor, energy and application — in short, all those qualities which differentiate advanced from low-grade communities — tend to raise wages because they increase product. So far as governmental action or labor organizations succeed in lifting this plane of efficiency they also contribute to the rise of wages. From this point of view the standard of life acquires an additional significance, because of the reflex action of the standard itself upon the efficiency of the laborer. The better the man, the more valuable his work. On the other hand, the margin may be affected by changes in the other factors of production. For instance, when land is relatively plentiful as compared to labor, the margin is high. In all new countries land rent is small, population sparse, and the return to labor abundant. In proportion as land becomes scarcer or less fertile, wages tend to fall relatively to land rent. *Per contra*, when new sections are opened by colonization or immigration, the tendency is for rent to fall and wages to rise. If land were the only other factor to be considered, it would be true that land rent tends to rise at the expense of wages.

Land, however, is not the only factor. As the supply of capital becomes more copious, the joint product of capital and labor rapidly increases. With the growth in the supply of capital the rate of interest tends to fall. When the rate becomes as low as in modern industrial communities, there is such a perpetual and prodigious renewal and multiplication of capital that the productivity of the marginal laborer will constantly augment. Instead of working with no tools or poor tools, he will have at his disposal ever better implements and finer machinery. Yet these better tools and finer machinery will cost constantly less. The product will be larger, and the

part of the joint product to be ascribed to capital will be relatively smaller. Wages, in other words, will tend to rise.

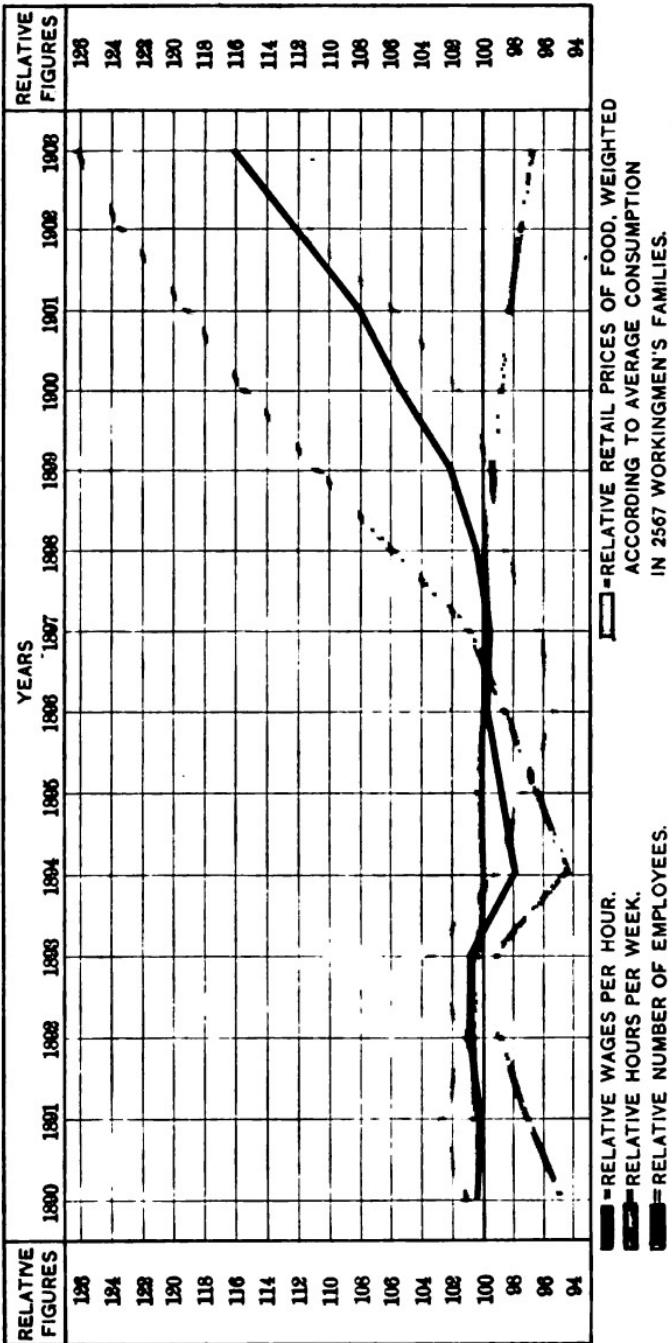
Where both these forces operate simultaneously the result depends on their reciprocal influence. In early stages of economic development, as in some of our Western states, both wages and interest fall while land rent rises. In the older and industrially progressive sections, on the other hand, the increase of capital may overbalance the relative scarcity of land, and although land rent will rise, the total product will increase so much more rapidly that wages will rise as well. Wages in the great industrial establishments of New England have increased during the last half-century, despite the growth of land rents. Capital tends to raise the marginal contribution of the laborer, because it adds to his efficiency, that is, to his control of the powers of nature.

There exist in all the important countries ample statistics to show the advance in real wages since the early stages of the capitalist system. We shall content ourselves with reproducing in the table on page 423 the figures for the United States since the civil war. These disclose the striking fact that real wages, that is, the amount of commodities that can be bought with the money wages, have risen more than 100 per cent in industry and more than 70 per cent in agriculture. In other words, notwithstanding the practical exhaustion of the free lands and the rise in land rents, wages have increased so that the laborers enjoy a continually greater command over the conveniences of life. There could be no more eloquent testimony to the power of the modern industrial system to enhance the welfare of mankind. We also add (opposite page 422) a chart showing the relation of wages to hours of work in the United States as compared with Europe, since 1890.

178. Variations in Wages.

Actual wages differ from normal wages thus far considered in three respects. The variation may be due to market influences, to the nature of the occupation, or to the conditions

WAGES
 HOURS OF WORK
 NUMBER OF EMPLOYEES
 RETAIL PRICES OF FOOD



From Bulletin of U.S. Bureau of Labor, No. 54 (1904).

MOVEMENT OF NOMINAL AND REAL WAGES, 1866-1903
 (1890 AS THE STANDARD YEAR).

Year.	Relative Nominal Wages (Industry).		Relative Real Wages (Industry).		Year.	Relative Nominal Wages, Farm Labor (with Board).		Relative Real Wages, Farm Labor (with Board).		Relative Nominal Wages, Farm Labor (with Board).	Relative Real Wages, Farm Labor (with Board).	
	Falkner's Index Nos. ¹	Relative Nominal Wages (Industry).	Relative Nominal Wages, Farm Labor (with Board).	Relative Real Wages (Industry).		Relative Nominal Wages, Farm Labor (with Board).	Relative Real Wages (Industry).	Relative Nominal Wages, Farm Labor (with Board).	Relative Real Wages (Industry).		Relative Nominal Wages, Farm Labor (with Board).	Relative Real Wages, Farm Labor (with Board).
1866	68.5	47.9	100.0 ³	70.0	1884	98.5	90.0	99.1	99.1	...	...	99.5
1867	73.7	56.0	...	...	1885	97.8	98.2	...	...	...	...	...
1868	72.3	53.9	...	...	1886	97.8	98.1	...	...	...	...	...
1869	75.2	52.7	98.0	81.8	1887	98.6	97.8	...	...	...	...	...
	25 Occupations. ²	City Wages.			1888	99.2	96.6	99.3	99.3	96.7	...	...
					1889	99.6	94.8	...	...	...	...	...
								Bureau of Labor, ⁴				
								519 Occupations.				
1870	87.3	68.7	...	...	1890	100.0	100.0	100.0	100.0	100.0	...	100.0
1871	94.7	72.2	...	...	1891	99.7	98.4	...	...	...	...	...
1872	97.0	74.9	...	...	1892	100.3	100.8	100.7	101.2	101.2	...	104.7
1873	93.2	76.3	...	...	1893	100.2	98.3	106.7	104.7	104.7	...	100.3
1874	91.1	73.2	...	...	1894	96.7	99.4	97.7	97.7	97.7	...	97.5
1875	88.7	72.5	90.8	74.3	1895	97.4	102.0	96.5	96.5	96.5	...	101.0
1876	86.3	74.4	...	...	1896	98.5	105.7	...	...	...	...	...
1877	88.8	77.8	...	...	1897	98.2	104.5	...	...	...	...	...
1878	91.3	82.9	...	...	1898	99.0	102.7	107.9	111.9	111.9	...	116.3
1879	91.8	90.5	83.8	82.6	1899	100.2	103.1	113.0	113.0	113.0	...	116.3
1880	92.6	82.8	...	...	1900	103.1	104.5	...	...	...	...	...
1881	95.3	82.4	...	...	1901	104.8	102.1	...	...	...	...	...
1882	96.9	83.3	99.7	85.7	1902	108.2	100.0	131.7	121.6	121.6	...	...
1883	97.7	85.9	...	...	1903	111.2	103.2	...	...	...	...	...

¹ Unweighted averages of wages in 21 industries, from Senate (Aldrich) Report on Wholesale Prices, Wages and Transportation, p. 180. All wages in this table are on the gold basis, and all real wages down to 1889 are based upon Falkner's weighted index numbers of prices, from the same report, p. 100. The meaning of the terms weighted and unweighted are explained below (§ 190).

² Unweighted averages covering 12 important cities, from Bulletin of the Department of Labor, No. 18, p. 669.

³ Weighted averages of monthly wages, reduced to gold basis, compiled from Bulletin No. 26, miscellaneous series, United States Department of Agriculture, p. 15.

⁴ Weighted averages of weekly earnings from Bulletin of the Bureau of Labor, No. 53, pp. 721-723. All real wages from 1890 to 1903 based upon index numbers of retail prices given in this bulletin.

This table is taken from Adams and Sumner, *Labor Problems* (1905), 514. It is selected as, on the whole, the most accurate and conservative presentation of the facts. The authors give several warnings as to the

of equality as between the giver and the recipient of wages in the same occupation.

(1) Market variations need not detain us long. Like all market prices, wages in every-day life are the result of ephemeral changes. While of the utmost importance to the practical business man, the market oscillations do not lend themselves to any detailed analysis. In brisk times, when the temporary demand increases faster than the supply, wages advance and *vice versa*. Farm hands secure higher pay at harvest time; factory operatives must choose between lower wages or less work during a period of great temporary depression. These facts are so obvious as to need no elaborate explanation.

(2) The inequalities may be due to the occupations themselves. We do not here indeed deal with market wages, but the wages are normal only within each occupation. They are particular normal wages, not general normal wages. Sometimes the inequality is more ostensible than real. The seasonal demand may differ. In the wholesale clothing trade the two busy seasons are followed by the slack months; the bricklayer can ply his vocation only in favorable weather. The rate of wages for permanent workmen must be such as to equalize these differences. The high nominal day wages of the bricklayer may be far lower real monthly wages; the high weekly or monthly wages of the clothing "operator" during the busy season may be only moderate real yearly wages.

Adam Smith attempted to reduce the inequalities in wages

use of the table: (1) In the industrial group, the figures are the results of three distinct investigations. The averages are not absolutely comparable. But the probable error is slight. (2) Up to 1889 the comparison is with wholesale prices, after 1890 with retail prices. The effect of this is probably to exaggerate the relative advance of real wages for the earlier period. (3) Statistics of real wages are really trustworthy only in periods of normal prosperity. In time of depression, prices fall more quickly than wages, so that real wages seem to be increasing when in reality there is much more unemployment and a decline in the welfare of the laborers as a whole. Thus in 1896 the real wages seem to be higher than in 1892 or 1902.

to five causes : the agreeableness of the occupation, the constancy of employment, the ease of learning the trade, the degree of trust to be reposed in the workman, and the probability of success. In a more general way, however, it may be said that inequality of pay is due to inequality of work. A watch-maker gets more than a street-sweeper because his contribution to the product is greater. If all units of labor were at least potentially equal, and if there was complete mobility, the street-sweepers would all become watch-makers and wages would stand at a level. Obviously, however, the higher the degree of required skill, the greater the relative scarcity of workmen. This scarcity may be due to four causes : a deficiency of natural talent, a lack of opportunity, the cost of mastering the trade, and the obstacles in the way of movement from employment to employment. The differences between occupations may thus be either natural or artificial ; in either case the labor force is at any given time divided into what are in some respects at least non-competing industrial groups.

(3) Finally, the discrepancy between normal and actual wages may be due to conditions of inequality. This may be ascribable to the fact that there is only one-sided competition, or that the conditions of the mutual competition are different. There may be a monopoly on the labor side. If any group of workmen can secure such a complete control of the trade that it need fear no entrance of undesired members, it can raise the rate of wages considerably above the normal point. In rare cases only is this possible on a large scale in modern times. When the workmen are not securely intrenched by legal privilege, as in the later stages of the mediæval guilds, a rise of wages far above the normal level in any one occupation will set in motion forces which will ultimately be strong enough to break down the artificial barriers. If the group is unduly restrictive in its membership, the pressure from the outside will result in the formation of analogous groups, anxious to participate in the extra gains, and ready to take over a share of these

gains. Minor instances, however, of this temporary monopolistic excess of wages are by no means infrequent.

On the other hand, competition may be absent on the side of the employers. Capital monopolies, however, have even less opportunity of driving wages down below the normal level than labor monopolies have of raising them above the level. For even though there may be no competition within the particular industry, there will always be the competition between different industries for a supply of workmen. The laborers are not compelled to enter the employ of the monopoly, and will not do so when the wages offered are lower than in similar occupations. In point of fact, capital monopolies do not pay lower wages. The American workmen in their official unions, as we have seen, are not opposed to the monopolies and trusts on the score of low wages. The really perilous effects of capital monopoly on wages is of a more insidious kind. All monopoly means a relative restriction of production, for the point of maximum monopoly revenue does not necessarily correspond to that of maximum competitive output and marginal competitive cost. Since wages stand in such a close relation to productivity, a diminution of product must finally diminish the amount available for the payment of wages. Monopoly of industry is at bottom as prejudicial to the wage-earner as to the consumer.

Of more importance in practical life is the divergence of actual from normal wages ascribable to inequality in the conditions of competition. As we learned at the outset of our discussion, the ability to drive a bargain varies, and a unitary market price can emerge only when there are complete competition and mobility on the side of both buyer and seller. In the labor contract the individual seller of labor is in ordinary cases the weaker party. The workman is both more ignorant and more necessitous. He is more ignorant because, while the employer knows both the cost of labor and the price of the product, the workman is unacquainted with the details of the business and can only guess at his real contribution to the

product. He is more necessitous because he cannot afford to wait. The machine may lie idle, and profits may cease for a time; but running expenses also cease, at least in part, and when the machine starts up, profits will follow. The laborer may remain idle, but running expenses, that is, cost of living, do not cease. If the machine stops, it still endures; if the workman stops, he starves.

When therefore the individual laborer is left to his own devices, he may fail to secure his due share of the joint product. Advantage may be taken of his ignorance or of his necessity; and the example that is set by the less scrupulous employer is not only contagious, but also often imposes itself as a competitive condition upon others who might naturally possess more scruples. The result is a struggle between wages and profits which transfers itself to the arena of both economic and political life, and which creates what is known as the labor problem.

179. Wages and Profits.

The relation of wages to profits is thus complementary as well as antagonistic. They are complementary in the sense that prosperity may mean both high profits and high wages. Profits, as we have seen, are the chief inducement to enterprise. The anticipated gains to be derived from fluctuations in value constitute the real incentive to business activity and hence to modern production. The hope of profits leads to the investment and increase of capital, and to a better co-ordination of the factors of production, and thus under normal conditions to an increase of output. The increase of product is apt indeed to be followed by a growth of population. When the product increases at a faster rate than the available supply of workmen, that is, as long as the product keeps ahead of the population, wage will tend to rise. Profits are constantly exhausting themselves, only to be renewed in a fresh attempt to conquer nature. High profits are hence the best hope of high wages, because it is chiefly through the existence of high profits that mankind has any assurance of that augmented output which

is the chief factor in raising the marginal contribution of labor. Profits and wages are in this sense complementary.

On the other hand, the immediate division of the product in each individual case and at any given moment is largely one of relative power. The more that is taken as profits by any single employer or group of employers, the less will be available as wages ; the more that is paid as wages, the less will be received as profits. In this sense wages and profits are antagonistic. In good times wages and profits both go up, in bad times wages and profits both go down ; but at all times both employer and employees will strive to secure the greatest possible share of the joint product for themselves. Under conditions of frictionless competition, complete mobility and effective equality in bargaining, the share of each will adjust itself to the point of relative contribution to the product ; under conditions of actual life each side may secure an excess at the expense of the other, and with incidental injury to the public. In the great majority of cases the excess goes to the employer. How this excess may be obviated, and this injury reduced to the lowest proportions, becomes therefore a matter of urgent concern.

The struggle of the laborer to improve his condition has assumed four principal forms. He has sought to invoke the protection of the law ; he has endeavored to strengthen himself and his fellows by organization ; he has attempted to substitute a new principle of remuneration ; he has striven on the basis of existing methods to effect a working agreement with the employers. In other words, the four phases of the struggle are labor legislation, labor organization, profit sharing or co-operation, and arbitration or conciliation. These will now engage our attention.

CHAPTER XXVII.

THE LABOR PROBLEM.

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181. Labor Legislation.

Legislation in behalf of the laborer has assumed three principal forms, dealing respectively with the conditions of employment, the conditions of remuneration and the results of employment.

(1) The chief abuses in the conditions of employment first disclosed themselves in the factories. The enactments designed to deal with these abuses are hence known as factory laws. It was not long, however, before the provisions of the law were extended to other occupations than those conducted in technical factories. None the less, the old name has persisted. England, as the original home of the factory system, led the way. The act of 1802 applied only to very young apprentices in cotton and woollen mills, that of 1819 to all young children in cotton mills. In 1825 and 1831 the age limit was raised; in 1833 the law was extended to other textile industries; in 1841 and 1844 it was applied to women in mines and textile factories. In 1847 and 1850 the provisions were made more rigorous; in 1864 they were made applicable to all large industries, and in 1867 to smaller workshops, until in 1878 a general code of factory legislation was enacted. In the rest of Europe and America the system came somewhat later. In the United States the movement began in New England, spread subsequently to the Middle and Western states, and is now being actively pushed in the South.

The earliest form of factory legislation was the prohibition of child labor. Children of tender age must be protected not only against the unprincipled employer but against the greedy or necessitous parent. The argument is biological and social as well as economic. To permit child labor is to stunt body and mind, to breed ignorance and immorality, to foster a progressive deterioration of the working population. The claim that

the earnings of the children are needed for the family support is dispelled by the well-authenticated fact that when the father is the sole wage-earner his income tends to equal the previous earnings of the entire family. In advanced states like New York child labor is regulated by the compulsory school law which prohibits employment of children under 14 during the school term ; by the factory law which forbids child work under 14 years, and regulates it between the ages of 14 and 16 ; by the mercantile law which extends substantially the same provisions to all commercial employments; and by the street trades law which applies to youthful newspaper vendors. The National Child Labor Committee formed in 1904 is bending its energies to securing the better enforcement of the law in the East and the enactment of similar measures in the rest of the country.

The second form of factory legislation is the regulation of the hours of labor. Applied first to children, it was gradually extended to all minors, then to women, and finally to adult males. At every stage in the development it was opposed as an infringement of " freedom of contract." In the United States at present there is still the greatest diversity in the laws and their interpretation ; but since the decision in 1898 by the Supreme Court upholding the Utah law which established the eight-hour day in mines and smelters, and the Kansas law, there has been a noticeable tendency in the direction of sustaining the constitutionality of similar measures.¹

The third form of factory legislation is the protection of life, limb and health. After the early appalling experience of the ease with which operatives were maimed and killed, government intervened to require various elaborate precautions and safety appliances. These provisions are now common, although not uniformly enforced. From protection of life to that of health

¹ This tendency has suffered what is probably only a temporary setback through the decision of the Supreme Court in 1905 asserting by a bare majority the unconstitutionality of the New York ten-hour bake-shop law.

is only a step, and in the so-called "dangerous trades" sanitary restrictions are now by no means unusual. The most recent development in America is the application of the principle to sweat-shops or the so-called parasitic trades, where as in Massachusetts and New York a license is now required for the manufacture of clothing, artificial flowers, and cigars in the home. It is an attempt to make domestic workshops amenable to factory restrictions.

(2) When we consider the conditions of remuneration rather than of employment, we encounter two chief forms of legislation. The one deals with securing the payment of wages. The principal abuses here are deferred payment of wages and payment in "truck" or orders on the company stores, often known as the "pluck me" stores. The truck system has been in great measure abolished in Europe by legislation requiring the payment of wages in cash. In the United States it has been restricted so far as corporations are concerned, but the effort to apply the prohibition to private employers is still in great part rendered nugatory by the courts as a violation of "freedom of contract."

While America lags behind Europe in this respect, both continents still shrink from adopting the second form of wage legislation, recently enacted in Australasia, namely, the minimum wage laws. Beginning in Victoria in 1896 with certain "sweated" industries, the plan has now extended to most of the colonies and has been made applicable to many trades. In those occupations where the remuneration is deemed to be below the level of a "living wage," a fixed minimum is established either by official bodies or by joint boards composed of the employers and employees in each trade. These rates are then compulsory upon the whole trade. The nearest approach to the system in Europe and America is the legislation fixing the wages of public employees like street-cleaners at a definite sum and requiring the payment of the "prevailing rate of wages" in all work done by the contractors for the government. Although the Australasian system has on the whole worked satisfactorily,

there is an obvious risk in such radical legislation in complicated communities whose industry is exposed to the constant changes of interstate and foreign competition. Yet it may well be that similar methods will ultimately be found necessary here.

(3) We come, finally, to the legislation affecting the results of employment. This, again, assumes two chief forms. The most important is that of employers' liability for injuries sustained by the workmen. In the United States this has been limited by the legal rules of implied risk and common employment or fellow servant. The first of these is to the effect that a workman on entering an occupation voluntarily assumes the risks connected therewith. The second is that when the injury has been caused by an agent, the latter must be regarded as a co-servant, and the principal is therefore not responsible. Under this system the employer virtually escapes all liability.

In Europe both these principles have been discarded. The doctrine of implied risk has been replaced by that of professional or occupational risk. It is recognized that, apart from wilful or contributory negligence, the individual workman cannot be held responsible. In entering the occupation he has no choice. The risk is not a personal but a collective one ; it belongs to the occupation, and should be a cost of the business in the same sense as insurance against other risks is a part of cost. Secondly, in modern factories or large enterprises the old common law rule of fellow servant, which arose in the day of the guild and domestic systems, has lost all meaning. To call a railway superintendent and a brakeman fellow servants because they both receive a salary is absurd. The old rule is gradually being modified by statute, but no American state has yet successfully applied to all industries in general the principle of Workmen's Compensation Acts, which, like the English law of 1897, frankly throws the responsibility for accidents upon the employer. The only attempt, that of Maryland in 1902, has recently (1905) been declared unconstitutional for a minor defect.

Other countries of Europe as well as Australia have gone con-

siderably further, and have adopted the plan of compulsory insurance of the laborer. Beginning in Germany in the eighties, the system has spread rapidly. It consists of three features—insurance against accidents, illness and old age—the premiums being paid in a declining ratio by the employer, the government and the workman respectively. America is manifestly not yet ripe for these methods, but with the gradual emergence of the sense of social solidarity, the economic legitimacy of such a system may finally be acknowledged. It is an attempt to make the community as a whole bear what are really the social burdens of modern industry, with its fluctuations, its risks and its uncertainties.

182. Labor Organizations—Object and Function.

Side by side with the effort of the state to help the laborers to secure a reasonable equality has been the endeavor of the workmen to help themselves through associated action. In fact the former has been largely the result of the latter. The organizations, starting within each trade, became known as trades-unions and gradually assumed a national, and in some cases even an international, form. Where action involving the general interests of all unions becomes desirable, we find them, as in the United States, combining to form councils or central labor unions in the cities, state federations in the commonwealths, and finally national bodies like the American Federation of Labor.

The justification of trades-unions was long disputed. Under the early law they were illegal as conspiracies. It was not until 1824 that they were legitimized in England, and not until much later that the free right of association was conceded elsewhere. The recognition that is to-day almost universally accorded them rests on the economic principle that in the modern labor contract the conditions of work have become collective or group conditions, and that the bargaining to be equal must be collective or group bargaining. The individual workman is nowadays helpless against the typical employer.

In a railway or a large factory work is carried on under broad general rules. The laborer who forms one of a group of tens, of hundreds or of thousands of workmen cannot expect to bargain successfully as an individual. His only hope lies in association. Freedom of contract is illusory because of the self-evident inequality. The trades-union is an attempt to restore to the individual as a member of the group the equality which has been lost through the transition from small-scale to large-scale industry. The trades-union is as inevitable a product of modern economic life as the corporation. The one is an association of labor, the other an association of capital; both are attempts to attain individual prosperity through concerted efforts.

There are two aspects to every trades-union, — the militant and the fraternal. As a fraternal organization the union seeks to accomplish some of the ends of the old-time guild. It insures the members against accident or death, it supports them when ill or out of work, it helps to educate them by meetings and lectures. More important, however, are the militant functions, through which the union seeks to promote its industrial power and to increase the earnings of its members. From this point of view its activities may be reduced to two general categories, — the attempt to standardize conditions of employment and the endeavor to restrict work.

Under the first head must be put the effort to secure a standard rate of pay and a normal working day. Sad experience has taught the laborer that if the average employer is free to make individual bargains with each workman he will tend to select the exceptional man to set the pace, and by paying him only ordinary wages, scale down the remuneration or overtax the energies of the average man, thus leading to premature decay and a real exploitation. To prevent this progressive deterioration the unions seek to secure a standard rate of wages. It is sometimes objected that this implies uniformity of payment. This is not quite accurate. Wages are paid either by the piece or by time. In the case of

piece work the more skilful workman will manifestly earn more. In certain trades piece work is preferred because, when new machinery is constantly being introduced or old machinery speeded up, it enables the workman to share in the advantage of the increased output. In England the unions advocate piece work in many trades; in America the preference is less marked, but is found in occupations like those of the shoe-workers, the weavers and some others. Even in the case of time work, however, which is advocated by the great mass of American unions, the uniformity that is sought is that of equal pay for equal work. There is little objection to putting the more skilful men into classes higher than the standard; but the standard itself must not be lowered. The effort is to make the standard a minimum, not a maximum.

Even when the uniformity of pay seems to be that of a so-called dead level, it must not be forgotten that the unions are here following the tendency of all modern life. The essence of modern capitalism is, as we have seen, the standardization of industry. If business enterprise depends on mass output and uniform production in order to improve the type, the laborer must not be blamed for pursuing the same end. At bottom the method is that of all democracy. Democracy is the most difficult form of government because its success depends on the high level of the mass. The path of progress consists in pulling the mass up to the plane of the better man, not in developing the aristocrat at the expense of the mass. Trades-unionism, like democracy, seeks here to level up, not to level down.

The fixing of a normal working day seems to be in contrast to the standard rate of pay, because the former prescribes a maximum, the latter a minimum. In reality, however, there is no difference. In a factory all must begin and stop work at the same time, because all are dependent on the machine. If overtime is permitted, it will not be long before the employment will be limited to those that are willing to work overtime; and when that occurs, the pay per hour will inevitably be

reduced. The attempt to curtail the hours of work is really an attempt to raise the standard of pay. Experience has shown that with the introduction of machinery concerted action of the men will be able to extort higher pay with shorter hours. According to the varying conditions in different industries, the normal working day is now in large parts of the United States as low as ten, nine and even eight hours. The maximum working day as well as the minimum rate of pay is the result of an effort to standardize conditions of employment, so that the standard may move up instead of down.

The success of the unions in standardizing employment is always beneficial to the workmen. Where the conditions are such that there is a real economy in high wages, it may go hand in hand with the ultimate interests of the employer and the public as well. When, however, we come to the other phase of trades-union activity — the attempt to restrict work — the matter is somewhat more complicated.

This effort assumes three forms, — the claim of the right to a trade, the limitation of apprenticeship, the restriction of output. In the first place, not a few of the labor troubles of the present have their origin in trivial and unseemly quarrels between the unions themselves as to who should do the work. These jurisdictional disputes are either (a) territorial disputes, due to the entrance of a new union into a given territory ; (b) demarcation disputes, where each union claims that a particular kind of work on the fringe belongs to it ; (c) organization disputes, where the increasing specialization of industry calls into being a new union which separates itself from the old, and (d) trade autonomy disputes, due to the fact that some organizations are industrial unions, comprising all the workmen in a given industry, while others are trades-unions including only the workmen in particular sections or trades within a great industry. All these jurisdictional disputes represent an attempt to transfer the old doctrine of vested interests from the domain of capital to that of labor. Secondly, the unions often insist on an unduly long period of apprenticeship, and seek to limit the number of

apprentices, or to admit new-comers to membership only on the payment of high fees. Thirdly, they frequently object to the introduction of new machinery or new methods, and when this objection is overruled they seek to limit the amount of work to be done through the "go easy" or "ca-canny" system.

That all these methods are in one sense indefensible is clear. If wages ultimately depend upon product, any effort to restrict product must finally act as a boomerang. Many unionists believe that there is a fixed amount of labor which has to be done; that if their union does not secure it, another will; and that if there are fewer members of the union, or if they all work less, or if there are less machines, the pay of each man will be higher. This "lump-of-labor" doctrine of the workman is just as fallacious as the old "wages-fund" theory of the capitalist and leads to equally erroneous conclusions.

From another point of view, however, these practices do not appear so utterly reprehensible. The jurisdictional disputes of the unions are sometimes the result of an effort to prevent the standard rate in the trade from being whittled down through the abandonment of a substantial part of the work to those accustomed to a lower remuneration. The effort to restrict apprentices is occasionally due to the endeavor to insure adequate preparation for the trade, or to frustrate the scaling down of all wages to the level of the apprentices. The attempt to fix a maximum output may be due to the same reason which led to the maximum working-day,—the desire to prevent the "bell-wether," or "pace-maker," or "rusher," or "leader" from subtly reducing the standard of the average workman. In short, while restriction of work is in itself indefensible and un-economic, it may in certain cases turn out to be a form of standardization and thus not without justification. Whether it is the one or the other can be determined only after a careful scrutiny of each individual case. The most progressive unions are now uncompromising foes of restriction, welcoming the introduction of new and better methods and discouraging careless and inefficient work.

183. Labor Organization — Methods.

Such being the objects of labor organization, a word must be added as to the means utilized to secure these ends. As militant organizations the unions employ two chief methods, — the strike and the boycott. The strike or concerted stoppage of work depends for its success upon the ability of the strikers to prevent others from taking their place. This has brought them into conflict with the law. The right to strike has been only grudgingly conceded. At first the courts held all strikes illegal as conspiracies, then they assumed the existence of malicious intent, next they endeavored to distinguish between various kinds of motives, especially in the case of "sympathetic" strikes, and finally they are now tending to discard altogether the question of motive and to uphold the right to strike as such. This, however, carries with it the right of picketing. When picketing assumes the form of peaceable persuasion to induce others to refrain from working, it is justifiable; when it degenerates into forcible opposition, disorder and wanton injury to body or property, it is clearly indefensible and is to be sternly repressed.

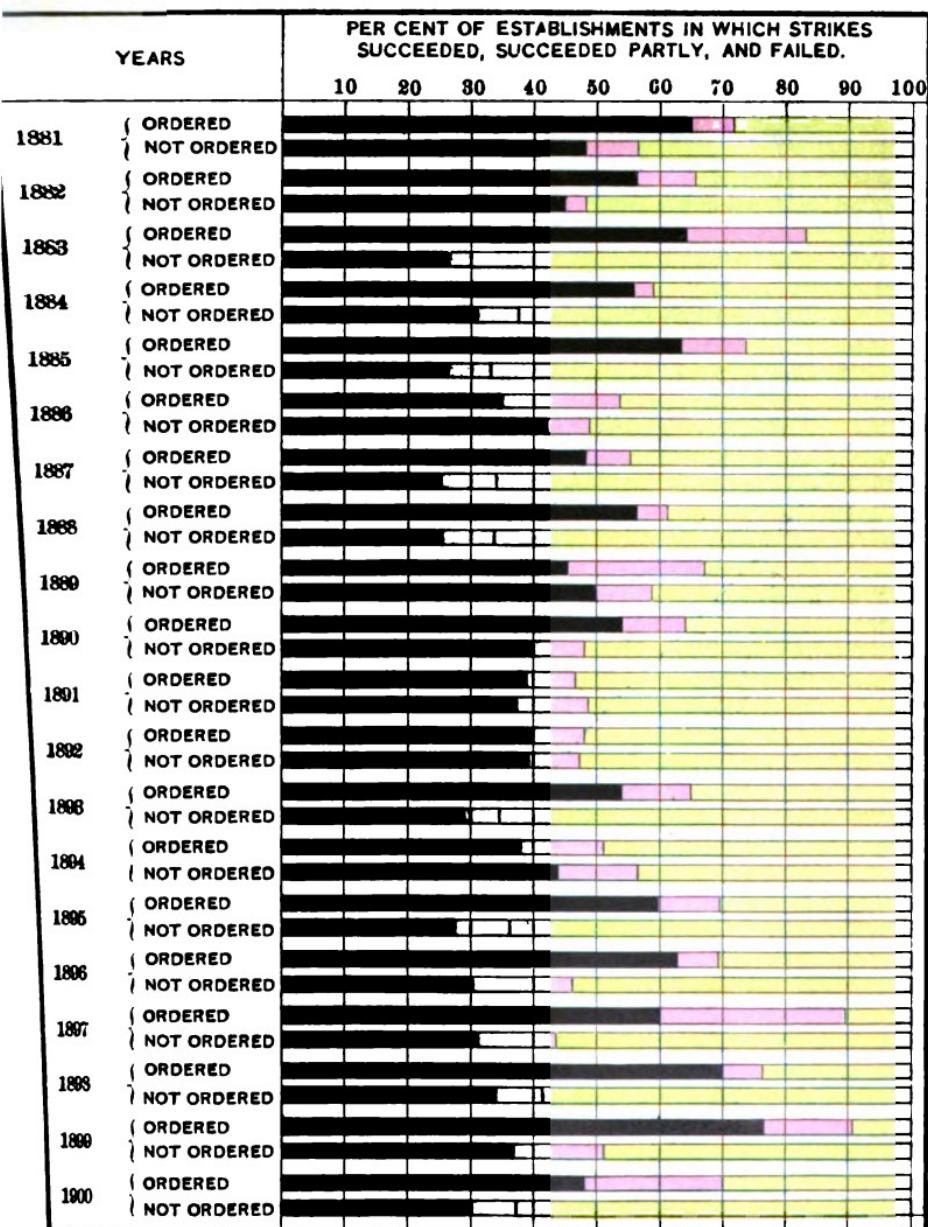
The history of strikes during the past half-century has accentuated four facts. (1) The losses to the strikers have been much exaggerated. The permanent gain from a successful strike often outweighs the temporary loss of all strikes, including the failures. The real injury is the disarrangement of industry and its effect on the consumer. (2) With the growth of unionism there has been a distinct amelioration in the conduct of strikes. Formerly violence and bloodshed were common, now they are rare. (3) The oldest unions approve of strikes only as a last resort; but when once entered upon, the strike is deemed to be distinctly more advantageous to the laborers than was the case in former decades. Strikes authorized by the central bodies are now both more infrequent and more successful than unauthorized strikes. Unionism has been, on the whole, a conservative force. (4) The outcome

of a strike is largely dependent on the state of public opinion, and the strike itself is no longer held to be a matter of private concern as between the employer and the workmen. The coal strike of 1902 was won, and the New York Subway strike of 1905 was lost, almost entirely because the issues were so clear that the general sentiment favored the strikers in the one case and opposed them in the other. The table opposite page 440 shows some results of strikes in the United States from 1880 to 1900.

The second practice of modern unionism is the boycott, or attempt on the part of the workmen to induce third parties to abandon business dealings with the employer. In its negative aspect it takes the form of the union label, which guarantees to the public that the goods have been produced under conditions approved by the union, or of the white list which contains the names of those firms especially recommended because they adhere to union conditions. In its positive aspect it assumes the form of the blacklist and the boycott proper. The name blacklist, however, is generally applied to the action of the employer in denouncing some obnoxious workman; while the analogous method on the part of the workman is termed the unfair list. The unfair list is usually confined to the mere publication of the names of undesirable firms: the boycott proper consists of more radical and thorough-going attempts to prevent business dealings. The negative boycott is usually upheld; the positive boycott is declared illegal, although there is a tendency in the modern law, even if as yet not so pronounced as in the case of strikes, to take a more liberal view and to make the decision hinge on the question of social progress.

The most recent activity of American unionism culminates in the question of the open shop. Originally a closed shop meant one objected to by the union because of a boycott or strike. When the boycott or strike was called off, the shop was declared open. Now, however, the closed shop means the union shop, that is, the shop which is closed to non-union

RESULTS OF STRIKES ORDERED BY LABOR
ORGANIZATIONS, AND NOT SO ORDERED, 1881 TO 1900.
BY YEARS.



■ SUCCEEDED, □ SUCCEEDED PARTLY, ▨ FAILED.

From Bulletin of U.S. Bureau of Labor, No. 54 (1904).

men ; the open shop is open in the sense that the employer may engage non-unionists. There is, however, still much confusion because of the failure to distinguish between a closed shop and a closed union. An open union is one which will admit any competent man into its ranks ; a closed union is an indefensible monopoly. No one can uphold a closed shop with a closed union ; the real controversy turns on the question of the closed shop with an open union. That is the true problem of the union shop.

In most of the English and in many of the American unions the open-shop question plays no rôle at all. This is generally true (1) where the agreements are made not with the individual employer, but with an association of employers, whereby it becomes the interest of each to prevent any infraction of the compact by his competitor ; (2) where the agreement is made not only for the union men, but for all the workmen, so that the employer can secure no advantage by hiring non-union men at lower wages ; (3) where all grievances of whatsoever nature are left to a board of arbitration. When any of these conditions is absent, as in the building trades or the clothing industry, it is difficult for an open-shop union to survive, and the institution of the closed shop often becomes a *sine qua non* of the existence of the union. It is the same consideration which explains the fact that in some cases the non-union man is regarded with indifference and that in others he becomes a "scab" or "strike breaker" and is considered a traitor or renegade. In such cases the appeal of the employer to the sacred rights of individual liberty falls on deaf ears, because the workman feels that the real liberty of his class is a result of associated action and that association here depends on the closed shop. Whether it is defensible or not can therefore be decided only after a careful consideration of the particular conditions. That the unions sometimes go too far is indubitable ; that the employers' association recently formed with the slogan of "liberty and the open shop" is equally extreme is no less indisputable. The real test in both

cases is this : is the union standardizing rather than restricting work, and is the closed shop necessary to the perpetuation of the union?

184. Profit Sharing and Co-operation.

While wages constitute the ordinary method of recompense to the laborer, there are two other possible systems of industrial remuneration. The one known as co-operation rests on the elimination of the capitalist as distinct from the laborer ; the other, which retains the capitalist but involves the participation of the laborer in the outcome of the enterprise, is popularly, although inaccurately, called profit sharing.

We say inaccurately, because the method of participation is found in three forms,—as a substitute for the wages system, as an adjunct to the wages system and as a modification of the wages system. The first is technically called product sharing, the second is known as gain sharing, while the third is the real profit sharing or industrial partnership.

(1) The principal example of product sharing is seen in farming and is known as the métayer method or share system. The one party supplies the land and occasionally additional capital, the other furnishes the labor ; and the product is divided. We call it a substitute for the wages system, because the remuneration of the tenant is not a stipulated wage but is contingent on the produce. Outside of agriculture, the chief instance is that of the fishing industry. In the Gloucester fisheries, for instance, when the capitalist provides the vessel, food and gearing, the "catch" after deducting the "trip charges" (*i.e.* the cost of the ice, barrels and water) is divided equally between the ship-owner and the crew. This is "sharing on halves" or the "half lay." When the crew furnishes the gear and provisions as well, they get three quarters of the catch, and the system is called "sharing on the quarter," or the "quarter lay." Sometimes the "fifth lay" is found. In seine fishing all of the crew share equally ; in other cases the share of each is apportioned according to his catch. The fishermen prefer this to fixed wages,

because of the intimate relation of reward and effort. When the fish are sighted, the most unremitting energy is necessary, and the men are unwilling to expose their rate of pay to the hazard of the lazy or inefficient wage-earner. The capitalist also favors the system, because it augments his profits. Another example of product sharing is the system of "tribute" still found in the Cornish mines, where each "pitch" is let out to that group of miners who agree to work the ground for the lowest sums per pound on the agreed values of the ore. In all such cases of product sharing the earnings of the laborers depend entirely on the results of their own efforts, not on the profits of the capitalist. Where the value of the product is dependent on the skill of the entrepreneur, as in ordinary industry, product sharing is inapplicable.

(2) The next form of participation recognizes the existence of the wage-earner, but awards him an added compensation as an incentive to better work. This also is really not profit sharing, because the extra sum is independent of actual profits and must be paid whether profits accrue or not. It is called "gain sharing" because both employer and wage-earner share in the increased gains that are presumed to ensue. Sometimes it is called the system of the "progressive wage," or the "premium payment," or the "bonus plan," or, as in England, the "reference rate" or "good fellowship" system. While a few such experiments have met with success, they have not on the whole commended themselves to the American workman. For since the bonus plan is based upon a minimum wage with a premium in certain cases, the average unionist fears that what may be gained by some as a bonus will be more than lost by a reduction of the minimum. He prefers to raise the standard rate for all, rather than to increase the premium for some.

(3) The final plan of participation leaves untouched the rate of wages, but modifies the labor contract by granting to the workman some participation in the actual profits of the business. The laborer here receives not only wages but profits, and the system is hence properly called profit sharing. The division can

be accomplished either by an annual cash dividend, or by a deferred participation in some provident fund or annuity, or by the distribution of shares in the stock of the corporation. The objects of such a system are in the highest degree commendable, both as leading to increased efficiency and as conducing to industrial peace. But here again experience, especially in America, has shown that the system possesses only a limited efficacy. The difficulties are fourfold : (a) it requires a peculiarly broad-minded employer ; (b) it presupposes a set of workmen who are at once so shiftless that they are not doing their whole duty and so intelligent that they realize the advantages of the inducement to more strenuous work ; (c) it assumes the existence of profits, whereas the majority of business enterprises incur losses ; (d) it complicates the wage contract by introducing another possible element of dispute in the ascertainment and adjustment of profits.

While all these forms of participation rest on the continued existence of the capitalist, the system of industrial co-operation attempts to eliminate the capitalist by uniting in the same individual the functions of laborer, capitalist and entrepreneur. In communities like England, where large department stores are unknown, distributive co-operation or so-called co-operative stores may be of some advantage to the consumer. In countries like Germany or Italy, where credit facilities are backward and where there is a leisure class ready to devote itself to the public good, co-operative banks, especially in agricultural districts, may achieve some measure of success. In special cases a system of co-operative credit, like the Building and Loan Associations of the United States, may subserve a useful purpose. But as an attempt to replace the wages system or as a general scheme of social regeneration, productive co-operation has been attended with insignificant results elsewhere and with almost complete failure in the United States. The reasons that usually militate against success are fivefold : (1) the lack of adequate initial capital ; (2) the scarcity of organizing ability ; (3) the unreadiness of the average member

to pay a salary sufficient to retain the exceptional manager ; (4) the mutual distrust and the absence of the true co-operative spirit ; (5) the danger, in case of success, of conversion into the customary profit-making corporation. With human nature as it still is found in the ordinary man, co-operation is even less than profit sharing a social panacea or an immediately practicable means of escape from modern industrial evils.

185. Arbitration and Conciliation.

The economist who is to be of any service to the statesman must therefore recognize human nature as he finds it. The avenue to industrial peace must be sought on the basis of existing industrial methods. While the enthusiastic idealists have been pursuing the will-of-the-wisp of socialism and co-operation, the long-headed practical men have elaborated working schemes of slow and steady progress. These rest on the frank recognition by both parties of the utility of collective or group bargaining.

Labor disputes may be adjusted before or after the differences have reached a climax. If a strike or lockout has been declared, it is difficult to allay the feelings of excitement or resentment. In industry as in politics it is harder to restore peace than to preserve it. This is, however, a lesson that is learned with difficulty. In early communities peace (*pax*) is the short-lived compact to cease from normal hostility ; in civilized nations the normal state of peace rests on mutual regard and readiness to make mutual concessions. The going about with a chip on the shoulder or the conviction that the "divine right" is all on one side is as disastrous in industry as in politics.

In the early stages of the factory system the employer refused to recognize any but the individual workman ; in the next stage he was willing to deal with representatives of his own working force ; at present he often concedes the wisdom of transacting business with the union as a whole. At first the workman granted the employer short shrift and strikes were

bitter and violent ; as the unions became more powerful they were sobered by responsibility ; and now in many cases their chief function consists in averting strikes and adjusting disputes. In industry as in politics war is still a last resort, but in those occupations where strikes have become the exception rather than the rule, the result is due chiefly to the elaboration of the so-called trade agreement. The system of conciliation is one of joint conference ; and it succeeds best where not only the employees but the employers are organized. The employers' associations, like the trades-unions, are, especially in their early years, often intolerant, vindictive and short-sighted. But experience happily shows that the mere habit of conference between representatives of both parties tends to dispel distrust, to allay animosity and to engender those feelings of mutual respect which are the surest guarantee of peace. In the United States, which began to tread the path of trade agreements at a somewhat later date than England, the independent movement within the industries themselves has been powerfully strengthened by the National Civic Federation.

If the dispute has come to a head, the attempt at adjudication is commonly called arbitration. The usage, however, is not uniform, for in many cases the arbiter or the board of arbitration succeeds in compounding the difficulties before they reach an acute stage. In the absence of an effective machinery within the trade, government often steps in. When it simply tenders its good offices through a system of voluntary arbitration, as in many of the American states, its success is not conspicuous. When it endeavors to force the contestants to come to terms, as in the Australian systems of compulsory arbitration, the danger is that an authoritative arbitrament may rob the one or the other party of the freedom to develop a cherished ideal that may be necessary to its own successful growth. Yet here again the interests of the part must be subordinated to those of the whole, and the final test must be the welfare of the community. Where labor disputes and strikes result in a wanton and widespread social injury, as

in the Chicago strike of 1894, the coal strike of 1902, the Colorado strike of 1904 or the numerous "tie-ups" which cripple transportation and disrupt industry on a large scale, the public will sooner or later insist on some form of settlement. Voluntary conciliation through trade agreement is the method best suited to the temper and tradition of the American people, and is fortunately making rapid progress. But no amount of reliance on the "sacred right of free contract" will in the long run prevent society from asserting its paramount claims to the maintenance of industrial peace. No community will permanently brook opposition to these plain dictates of self-preservation and social progress.

Book IV.

Value and Exchange.

CHAPTER XXVIII.

MONEY.

186. References.

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187. Functions of Money.

The fundamental uses of money are to serve as a medium of exchange and to act as a measure of value. Which of these was the earlier is uncertain as well as unimportant. As soon as the difficulties of an extensive barter disclosed themselves, the employment of a commodity for the one purpose implied its use for the other. Value in business life is exchange value; when we express exchange values of all other commodities in terms of one, we do so with the implication that they are continually being exchanged for it, and when they are so exchanged, their relative value is necessarily measured by it. Sometimes money is called the standard or denominator of value rather than the measure of value. This is, however, no real distinction, because a standard is of use primarily for measuring. In saying that money expresses the value of commodities in general, or that these values are reduced to a common denominator, we virtually affirm that money measures their value.

The secondary functions of money are three in number: (1) Money is a standard of deferred payments. If we lend something for a term of years, it is important that what is repaid by the borrower should leave us as far as possible in

the same relative situation as before. (2) Money is a store of value. If we wish to lay by a fund of wealth, it is important that when we want it again we shall be able to find it intact. Any durable commodity would perform this function as well, but in the case of money we have greater assurance that its value will be stable. (3) Especially in modern times money is used as a reserve for credit operations. A large proportion of money must be kept seemingly idle, when it really serves as a basis for credit transactions. This will be explained in the next chapter, but the table appended herewith will show at a glance what a large proportion of the coin actually existing in various countries is kept in reserve either by the banks or by the government.

APPROXIMATE STOCKS OF COIN IN VARIOUS COUNTRIES IN 1903.¹

	GOLD.		SILVER.
	Reserve in Banks and Treasury.	Total.	
United States . . .	\$859,000,000	\$1,320,400,000	\$679,200,000
Great Britain . . .	182,800,000	530,400,000	115,800,000
France . . .	458,900,000	968,300,000	419,800,000
Germany . . .	132,800,000	801,400,000	208,600,000
Italy	116,400,000	141,100,000	36,800,000
Russia	385,800,000	783,700,000	101,900,000
Austria-Hungary	235,800,000	286,800,000	79,200,000
Spain	78,800,000	78,800,000	173,700,000
India	63,200,000	63,200,000	546,400,000
China . . . .	.....	.....	345,800,000
Siam . . . .	.....	1,000,000	193,000,000

The origin of money is to be sought in the attempt to evade the difficulties of barter. As soon as the objects to be exchanged began to multiply, the need of some one commodity in which to measure, and through which to exchange, the others

¹ Arranged from Report of Secretary of Treasury, 1904, p. 324.

became obvious. Originally, therefore, all money was merchandise ; and it was only at a much later period that the commodity was stamped or coined.

Historically, almost every imaginable commodity has been used for money. Whatever happened to be common and at the same time widely wanted, served as money. Articles of food like rice, dried fish, olive oil, nuts, wheat, maize, tea, salt, dates, tobacco and whisky ; weapons like knives, fire-arms, sword-hilts, powder and shot ; implements like hoes, shovels and common utensils ; clothing made of wool, cotton, leather, skins, pelts and furs ; animals such as sheep, horses and oxen ; ornaments like beads, shells, ivory tusks, fish teeth and feathers ; and metals like iron, lead, tin, copper and bronze, have been employed at one time or another. In every developed community silver and gold were finally selected to receive the government stamp as minted or coined money, because they possess in a peculiar degree the attributes of transportability, divisibility, homogeneity, great value in small bulk, durability, recognizability, malleability and stability.

188. Kinds of Money.

Money may be classified in three ways, — as actual and ideal money, as standard and token money, as metallic and paper money.

(1) Actual money is that which actually circulates. Ideal money, or money of account, is that in which accounts are kept. Its use may be due to necessity or to habit. In the middle ages, when actual money was continually tampered with, the merchants were compelled to keep accounts in *scudi* which were not coined. Guineas are to-day unknown in England and shillings in America ; yet sales are often effected in Great Britain in guineas instead of pounds ; and in the rural districts of the Atlantic seaboard transactions frequently take place in shillings in lieu of dollars.

(2) Standard money is coin which is legal tender for all debts,

of full weight, and used as a standard to which the value of all other money is referable. The value of the coin in such cases is equal to that of the bullion contained in the coin. Token or subsidiary money consists of coin (*a*) whose legal or mint value exceeds that of the bullion, (*b*) whose coinage is not free and (*c*) which is not full legal tender.

In the United States the standard is the gold dollar, containing 23.22 grains of pure gold. The smallest gold coin actually issued since 1890 is the quarter eagle. The other coins are divided into three classes: (*a*) The minor or token coins are the bronze, copper and nickel one, two, three and five cent pieces. Of these only the first and last are now coined, with legal tender quality up to twenty-five cents. (*b*) The subsidiary silver consists of the dimes, quarter and half dollars, which are legal tender up to ten dollars. The pure silver in these is proportionately less than in the full dollars, in order to prevent their being melted down or exported. The dollars contain $37\frac{1}{4}$ grains of pure silver, the half dollar only 173.61 grains (instead of 185.8 grains). (*c*) The third class consists of the silver dollar, which is now in fact also subsidiary, because it is not legal tender for the redemption of gold certificates, because there is no free coinage, and because its mint value, since the recent fall in the price of silver, is far superior to the bullion value.

The term free coinage is employed in two senses. Governments sometimes make a charge for converting bullion into coin. If there is no charge, the coinage may be said to be free. On the other hand, free coinage may mean the right of any owner of bullion to have it converted into coin, thus profiting by any discrepancy between the value of the bullion and that of the coin. Free coinage in this sense is now permitted in advanced countries only in the case of gold, the standard money, where there can accordingly be no such discrepancy. When we commonly speak in America of the free coinage of silver, we employ the term in this second sense. Another term sus-

ceptible of a double meaning is *seigniorage*. Ordinarily it signifies the mint charge made by government. It involves to this extent a difference between the bullion and mint value of the coin, and it was this difference which accrued to the mediæval *seigneur* or local potentate who had the monopoly of coinage. Seigniorage in this sense has been abolished in England and America. But where, as in the United States, government purchases a quantity of silver for 40 or 50 cents and converts it into a coin with a face value of a dollar, the difference or profit is also popularly called seigniorage. This profit, which has of recent years amounted to large sums, will obviously be wiped out if the government ultimately melts down the coin.

(3) Paper money, as opposed to metallic money, may also be subdivided into three classes,—representative, fiat and fiduciary money. (a) Representative money consists of paper which certifies that an equivalent amount of coin or bullion is deposited in the government treasury. Of this nature are the American gold and silver certificates, which represent coin, and the fast-vanishing treasury notes, which represent silver bullion. The issue of treasury notes began in 1890 and ceased in 1893. Since 1900 it has been the policy of the government to retire these notes, and in July, 1905, there were only between nine and ten million dollars outstanding. The value of all representative money obviously depends on that of the metallic money which it replaces. (b) Fiat money consists of paper whose value rests on the fiat or declaration of government. Such money must sooner or later be bolstered up by the affixing of a legal tender quality, that is, by the declaration that the money is good legal tender in discharge of all debts. Even this, however, will not prevent depreciation unless its quantity is carefully restricted and unless it is kept redeemable in metallic money. The difference between the face value of the money and the real value of the paper out of which it is made is virtually a seigniorage amounting in this case to practically its entire value. Fiat money is sometimes called soft money, in

contrast to metallic or hard money. The paper money issued by the American colonies as well as the currency of the continental congress are warning examples of the effects of irredeemable paper money. The present "greenbacks" retain their value, because for over a quarter of a century their quantity has been strictly limited and because they are kept redeemable in gold. The advantage of basing fiat money on land security is illusory; in pre-revolutionary Pennsylvania the attempt succeeded only because the issue was restricted; in the other colonies as well as in the case of the revolutionary French assignats, when this precaution was not observed the experiment ended in dire failure. Government cannot create the value of money; it can only register the value which is created by economic forces.

(c) Fiduciary or credit money consists of promises issued by private or semi-private institutions, to pay coin. The chief example is bank notes. Other forms of credit, like checks, warehouse receipts, promissory notes and bills of exchange, play an important rôle in effecting payments, but do not constitute money, properly so called. So far as credit money serves as a medium of exchange its value depends on the extent to which the promise to pay will be kept, that is, upon its ready convertibility into coin. Inconvertible credit money is not a whit better than irredeemable fiat money.

189. Value of Money — The Quantity Theory.

Prices of single commodities may rise or fall because of relative variations in the forces which affect particular demand and supply. A change in the general level of prices, on the other hand, involves an alteration in the commodity in which all values are estimated or prices are expressed. A change in the value of money means a change in its purchasing power, that is, in the general price level. The value of money, like that of every other commodity, is an expression of its marginal utility.

The important point, then, is the location of the margin. We can approach the subject from the point of view of the capacity of money to do its work or of the amount of work to be done.

(1) From the first point of view the location of the marginal increment obviously depends on the number of increments. That is, the greater the quantity of money, the lower will be the margin, and hence the value. To assert, as some do, that money differs from other things in that the more of anything else we have the less we want, while the more money we have the more we want, is to confuse money with general purchasing power. Everything that is salable has purchasing power. No one carries with him or hoards more than a small sum of money. Whether he deposits actual coin in the bank or wheat in the elevator is immaterial. It is not the money, but the money's worth, that constitutes his wealth. If we say that the more money he has the more he wants, we can equally well say, the more wheat he has the more he wants. Yet that does not prevent the price of wheat from falling as the supply increases. This does not mean that doubling the quantity of money will result in doubling the general price level. As Gregory King pointed out in the seventeenth century, wheat will rise in price faster than the supply falls. King estimated that a deficiency in the harvest of one, two, three, four and five tenths would raise the price three, eight, sixteen, twenty-eight and forty-five tenths respectively. But although the relation of quantity to value is not precisely proportionate, it is none the less real.

While the quantity of money is of importance in affecting the location of the margin, the efficiency of the increment at the margin must not be overlooked. This is what is called the rapidity of circulation. Rapidity of circulation bears the same relation to quantity of money as the productivity of labor or capital to the number of laborers or the amount of capital. In an advanced community and with a great intensity of business the rapidity of circulation may be such that a smaller quantity of

money will perform the same work as a larger quantity in a backward community with a lesser rapidity of circulation. The value of money or price level in the two communities may then be the same.

(2) On the other hand, we may approach the subject from the point of view of the amount of work to be done. This implies demand for money. Demand for money, however, depends primarily upon the extent or volume of business. It is also affected by the devices or substitutes employed to do the business. In modern communities these assume the form of credit transactions, to be discussed in the next chapter. A country which, like the United States, commonly uses checks even for retail payments, needs relatively less money. Demand for the money commodity hence depends (*a*) on the use of the commodity for other than monetary purposes, (*b*) on the amount of business and (*c*) on the need for money as a reserve for credit operations.

The general law of the value of money may thus be expressed in the equation : the volume of money multiplied by the rapidity of circulation is equal to the number of transactions in cash that are effected at a given price level. The so-called "quantity theory" of money, about which there has been much aimless discussion, does not mean that the price level depends solely on the amount of money, but that, other things being equal, that is, in the absence of relative changes in the other factors, a variation in the quantity of money will produce a change in the price level. In many cases this is the controlling factor. The revolution of prices in the sixteenth century, for instance, was due to the discovery of the American silver mines ; the fall of prices from 1873 to 1896 is ascribable to the fact that the increased output of gold did not keep pace with the demands of business. The phrase "quantity theory of money" is only an elliptical way of stating the ordinary law of demand and supply.

190. Value of Money — Cost of Production.

The relation of the value of money to its cost of production does not involve any new principle. The only difference between money and other commodities is that the influence of cost of production upon the supply, and therefore upon the value of money, works itself out more slowly.

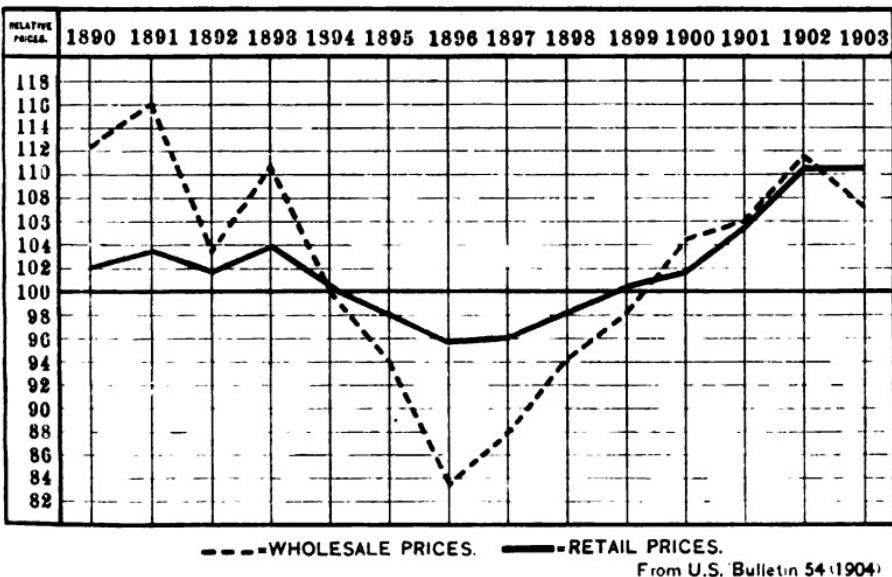
The value of money, it must be remembered, is not due to the value of the gold, any more than the value of iron beams to that of iron ore. On the contrary, just as the value of iron ore is due to that of iron beams (and other iron products), so the value of gold is due to the value of money (as well as of gold used in the arts). Just as the value of any reproducible commodity tends to adjust itself to the point of marginal cost, so the value of money tends to adjust itself to the marginal cost of the money commodity. A decrease in the expense of mining, such as that which has been effected by the modern cyanide process, renders possible a far greater output. Since the precious metals are exceedingly durable, however, this annual increment forms only a small fraction of the entire available supply and will not produce any immediate change in value. Sooner or later, however, an alteration in the rate of annual increase will make itself felt. While fluctuations in particular prices are often sharp and sudden, because of the insignificance of the stock on hand as compared to the quantities that can be produced at an altered cost, the variations in the general price level due to changes in the cost of money are far more gradual. These variations, moreover, are not instantaneous over the whole economic field, but propagate themselves in waves from commodity to commodity. In a period of rising prices, for instance, as Cairnes pointed out, crude products at first rise more than manufactures and animal more than vegetable products, while wages are almost always the last to advance. Moreover, wholesale prices fluctuate far more than retail prices, as is ap-

parent from the charts opposite pages 458 and 459. The method of ascertaining these average prices is explained on the next page.

The level of prices may be affected by impulses starting from the side of commodities as well as from that of money. The price level in China is different from that of America. In Athens, at the time of Pericles, money was worth at least three times as much as to-day; in the United States a century ago the purchasing power of money was far greater than at present. The explanation is to be sought in the general conditions of demand and the circumstances of cost. Modern industrial methods lead to vast and varied consumption, to more efficient production and to higher wages. The greater command of wealth and the lower real cost to society are, however, accompanied by the higher money prices that go with the augmented wages. In other words, the general level of prices tends to rise; that is, more money is needed to effect the exchanges. This can, however, come about only if the increased supply of money adjusts itself to the newer price at a lower cost level. Thus, while diversified demand, augmented consumption and mass production set in motion an increase of prices, they must be accompanied by a reduction in the relative cost of producing or acquiring the money commodity if the rise is to be permanent. This is what happened in Germany a generation ago, and what is happening on a far greater scale in Japan at present.

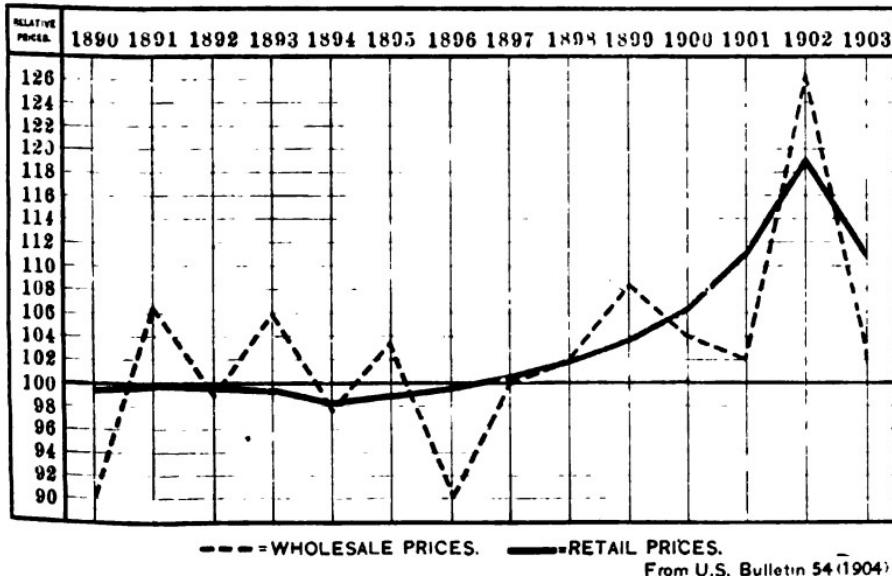
Because of the fact that values of commodities as well as of money itself are constantly changing, it is not always easy to measure with precision the variation in the purchasing power of money. The best expedient is that of the so-called index numbers. Here the price of an article at a given time, or its average price during a given period, is taken as a basis, and called 100. If at the next selected date the price has risen one-tenth, it would be assigned the figure 110. By selecting several articles and taking the average of the figures as they vary from the base line of 100, we reach the index number.

RELATIVE WHOLESALE AND RETAIL PRICES OF FOOD
IN THE UNITED STATES, 1890 TO 1903.
[AVERAGE PRICE FOR 1890 TO 1899 = 100.]

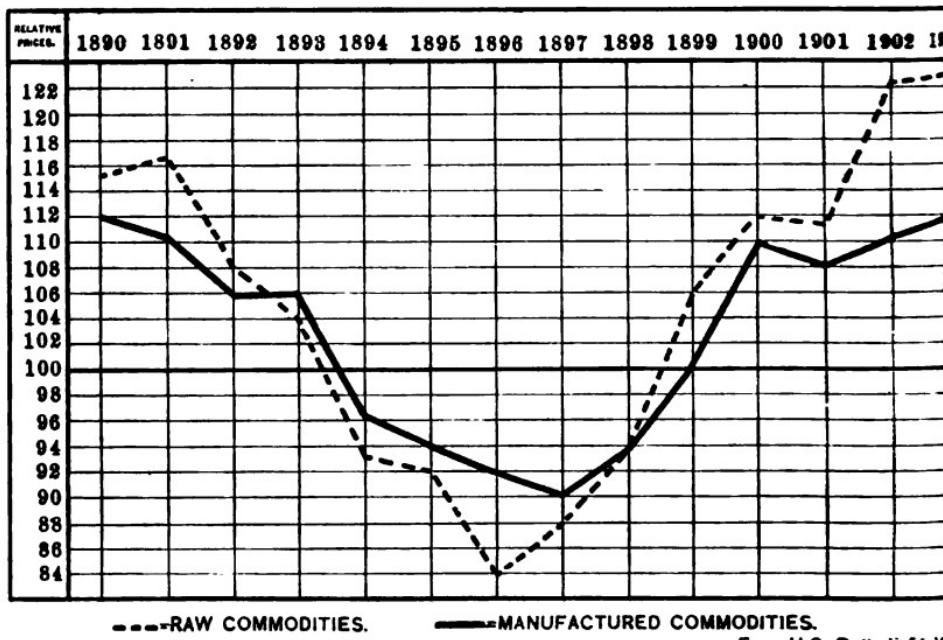


RELATIVE WHOLESALE AND RETAIL PRICES OF FRESH BEEF,
1890 TO 1903.

[AVERAGE PRICE FOR 1890 TO 1899 = 100.]

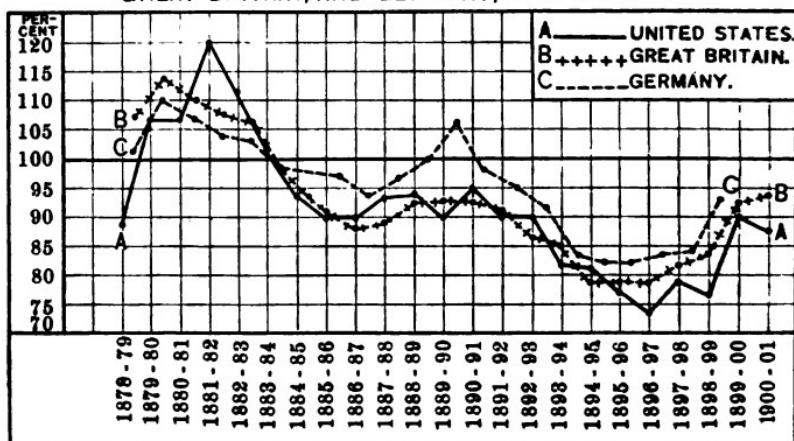


RELATIVE PRICES OF RAW AND MANUFACTURED COMMODITIES
1890 TO 1903.
[AVERAGE PRICE FOR 1890 TO 1899 =100.]



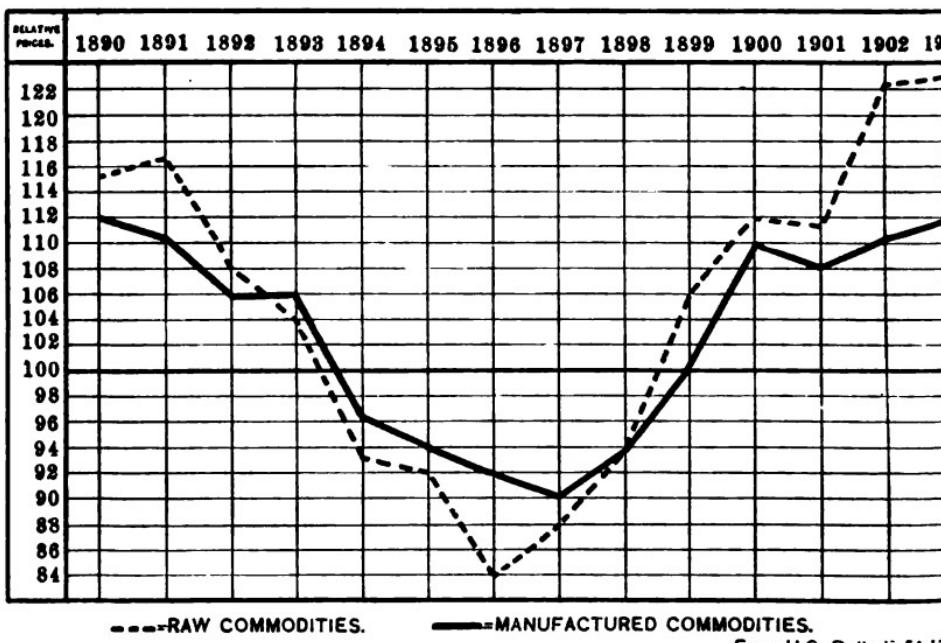
From U.S. Bulletin 54 '93

CHART SHOWING COMPARATIVE MOVEMENT
OF WHOLESALE PRICES IN THE UNITED STATES
GREAT BRITAIN, AND GERMANY, 1878 TO 1901.



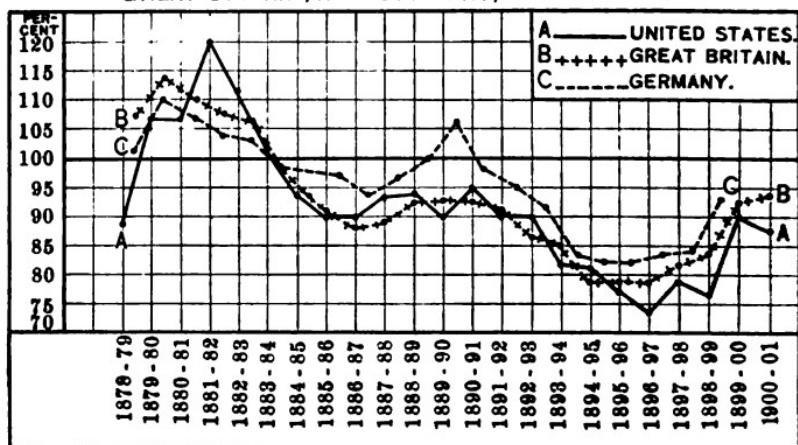
From Report of the U.S. Industrial Commission, Vol. XIX

RELATIVE PRICES OF RAW AND MANUFACTURED COMMODITIES,
1890 TO 1903.
[AVERAGE PRICE FOR 1890 TO 1899 = 100.]



From U.S. Bulletin 54-19

CHART SHOWING COMPARATIVE MOVEMENT
OF WHOLESALE PRICES IN THE UNITED STATES
GREAT BRITAIN, AND GERMANY, 1878 TO 1901.



From Report of the U.S. Industrial Commission, Vol. XIX

The utility of the index number method depends partly on the number and choice of the commodities selected, partly on the decision to use retail or wholesale prices, partly on the kind of average employed. Among the various kinds of averages which can be used in any mathematical computation, are the arithmetic, the geometric and the harmonic average. The arithmetic average is reached by adding a given set of quantities together and dividing by their number. The geometric average is found by multiplying a number of quantities and extracting a root equivalent to that number. The harmonic average is what the mathematicians call the reciprocal of the arithmetic average. In the case of prices of commodities there is still another choice, known as that between the simple or the weighted average. Weighting means assigning to each article an importance proportionate to the amount sold or to some other criterion, which distinguishes one commodity from another. In practice, however, it has been found that there is not enough difference between these various methods seriously to impair the value of the result. The best known index numbers are those of the London Economist, of Messrs. Palgrave, Soetbeer, Sauerbeck, Falkner, Commons, Dun, and of the United States Labor Bureau.¹ Without some form of index number it is virtually impossible to make more than a mere guess at the rise or fall in the general price level. An adequate discussion of this subject, however, belongs more properly to the science of statistics. It will be of interest, nevertheless, to append herewith (page 460) a table showing the changes in the general price level for the past quarter of a century in the United States as compared with Great Britain and Germany.

On the chart opposite page 459, the same facts are illustrated by lines instead of figures. In the table on page 423, the system of index numbers is likewise employed.

¹ For details see above, § 186. They are all explained at considerable length in the *Bulletin of the Department (now Bureau) of Labor*, no. 39, 1902.

COMPARATIVE MOVEMENT OF WHOLESALE PRICES IN
THE UNITED STATES, GREAT BRITAIN AND GERMANY,
1878 TO 1901, AVERAGE PRICES FOR 1879-89
BEING 100.¹

Year.	United States.	Great Britain.	Germany.
1878-79	89	112	...
1879-80	107	107	102
1880-81	107	114	110
1881-82	120	110	107
1882-83	111	108	104
1883-84	102	106	103
1884-85	94	95	99
1885-86	90	91	94
1886-87	90	88	97
1887-88	93	89	94
1888-89	94	93	97
1889-90	90	93	100
1890-91	95	93	106
1891-92	90	91	98
1892-93	90	87	95
1893-94	82	85	92
1894-95	81	79	83
1895-96	77	79	82
1896-97	73	79	82
1897-98	79	82	83
1898-99	77	84	84
1899-1900	90	93	100
1900-1901	88	94	...

191. Stability of Money—Bimetallism.

Inasmuch as money is itself a commodity, its value is subject to fluctuation. The effort of business life is to reduce these

¹ From United States Industrial Commission *Report*, XIX, 38. The index numbers for the United States are those of Commons; for Great Britain, those of Sauerbeck; for Germany, those of Conrad. The index numbers for Great Britain, as originally compiled, are based on the prices for the years 1867-1877, but have been converted to the base of 1879-1889 for comparison. The index numbers for the United States are for the crop or fiscal year July 1 to June 30, while those for Germany are calendar years, and those for Great Britain are calendar years, 1879-1883, and thereafter crop years.

fluctuations to a minimum and to insure stability in the value of money.

From the time that business activity began on a large scale in thirteenth-century Europe gold and silver were used interchangeably as money. The conditions of supply were such that a unit of gold was worth about ten or eleven units of silver ; that is, the market ratio was one to ten or eleven. Like all market ratios, however, this was subject to constant oscillation. The legal or mint values of the coins were fixed in each community, and advantage of this fact was taken by the money-changers to export or to melt down the over-valued or dearer metal. The result was an attempt on the part of government to prevent the disappearance of the one or the other metal, by drastic but unavailing prohibitions of exportation and by repeated changes in the metallic contents of the coins. The confusion was heightened by the action of the princes in reducing the purity or weight of the coins in order to profit by what was a virtual confiscation. The discovery of the new world had a double effect. Between 1500 and 1560 the annual product of gold increased about 50 per cent, that of silver about 600 per cent. Not only did prices rise enormously, but the value of silver relatively to gold now fell so that the ratio was about 15 to 1. By the beginning of the nineteenth century, when the ratio was about 16 to 1, the futility of the mediæval methods of regulation was recognized in England, and the system of bimetallism was abandoned, gold being definitely selected as the standard. The other countries of the world followed slowly. The adoption of the gold monometallic system has been accelerated by the events of the last quarter of the nineteenth century. The discovery of the Comstock lode and the opening up of other recent cheap sources of supply so enormously increased the output of silver that its value diminished rapidly until the ratio of silver to gold now fluctuates from between 35 and 40 to 1.

The following table will show the changes in the production

of gold and silver since the discovery of America, arranged by periods of twenty years during the sixteenth century, when the first great changes occurred; then by periods of hundred years during the next two centuries, during which the output of silver increased only slowly; then by fifty years up to the gold discoveries in the middle of the nineteenth; then by five-year periods after the discovery of the Comstock lode in the seventies; and finally by annual periods since the recent prodigious increase in the output of gold:

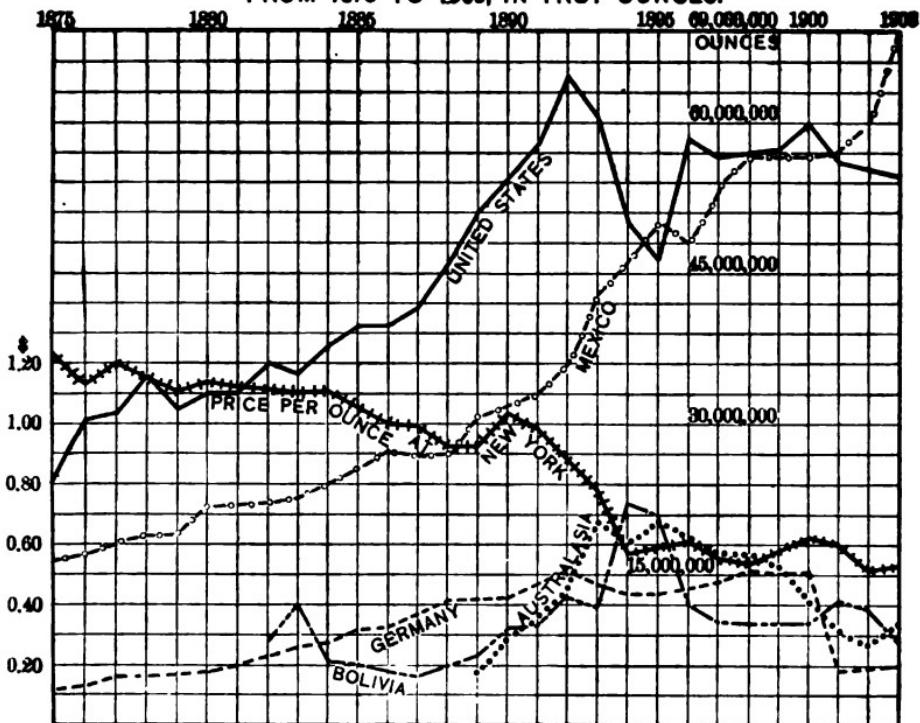
**PRODUCTION OF GOLD AND SILVER SINCE THE
DISCOVERY OF AMERICA.¹**

	GOLD.		SILVER (Coining value.)	
	Total.	Average Annual.	Total.	Average Annual.
1493-1520	\$107,931,000	\$3,855,000	\$54,703,000	\$1,954,000
1521-1544	114,205,000	4,759,000	89,986,000	3,740,000
1545-1560	90,492,000	5,656,000	207,240,000	12,952,000
1561-1580	90,917,000	4,546,000	248,990,000	12,450,000
1581-1600	98,095,000	4,905,000	348,254,000	17,413,000
1601-1700	606,315,000	6,063,000	1,547,731,000	15,477,000
1701-1800	1,262,805,000	12,628,000	2,370,809,000	23,708,000
1801-1850	787,463,000	15,745,000	1,360,237,000	27,204,000
1851-1875	3,173,869,000	126,954,000	1,288,757,000	51,548,000
1876-1880	572,931,000	114,586,000	509,256,000	101,851,000
1881-1885	495,582,000	99,116,000	594,773,000	118,955,000
1886-1890	564,474,000	112,895,000	704,074,000	140,815,000
1891-1895	814,736,000	162,947,000	1,018,718,000	203,742,000
1896-1900	1,286,494,000	257,298,000	1,071,148,000	212,274,000
1901	260,992,000	260,992,000	223,691,000	223,691,000
1902	296,049,000	296,049,000	208,594,000	208,594,000
1903	325,527,000	325,527,000	220,371,000	220,371,000

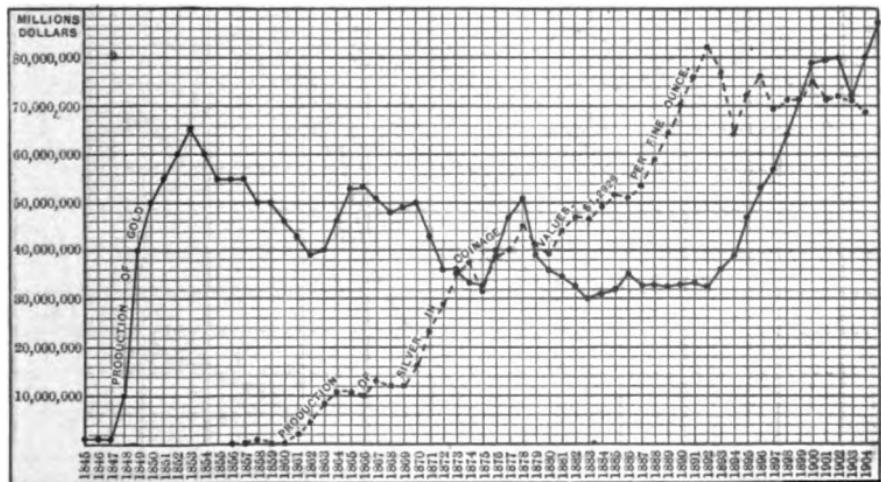
In the charts opposite pages 462 and 463 the same facts in somewhat more detail are shown for the more important periods of the nineteenth century, not alone for the world in general, but

¹ Arranged from *Report of Secretary of the Treasury*, 1904, p. 416.

**PRODUCTION OF SILVER IN THE PRINCIPAL COUNTRIES OF THE WORLD
FROM 1875 TO 1903; IN TROY OUNCES.**

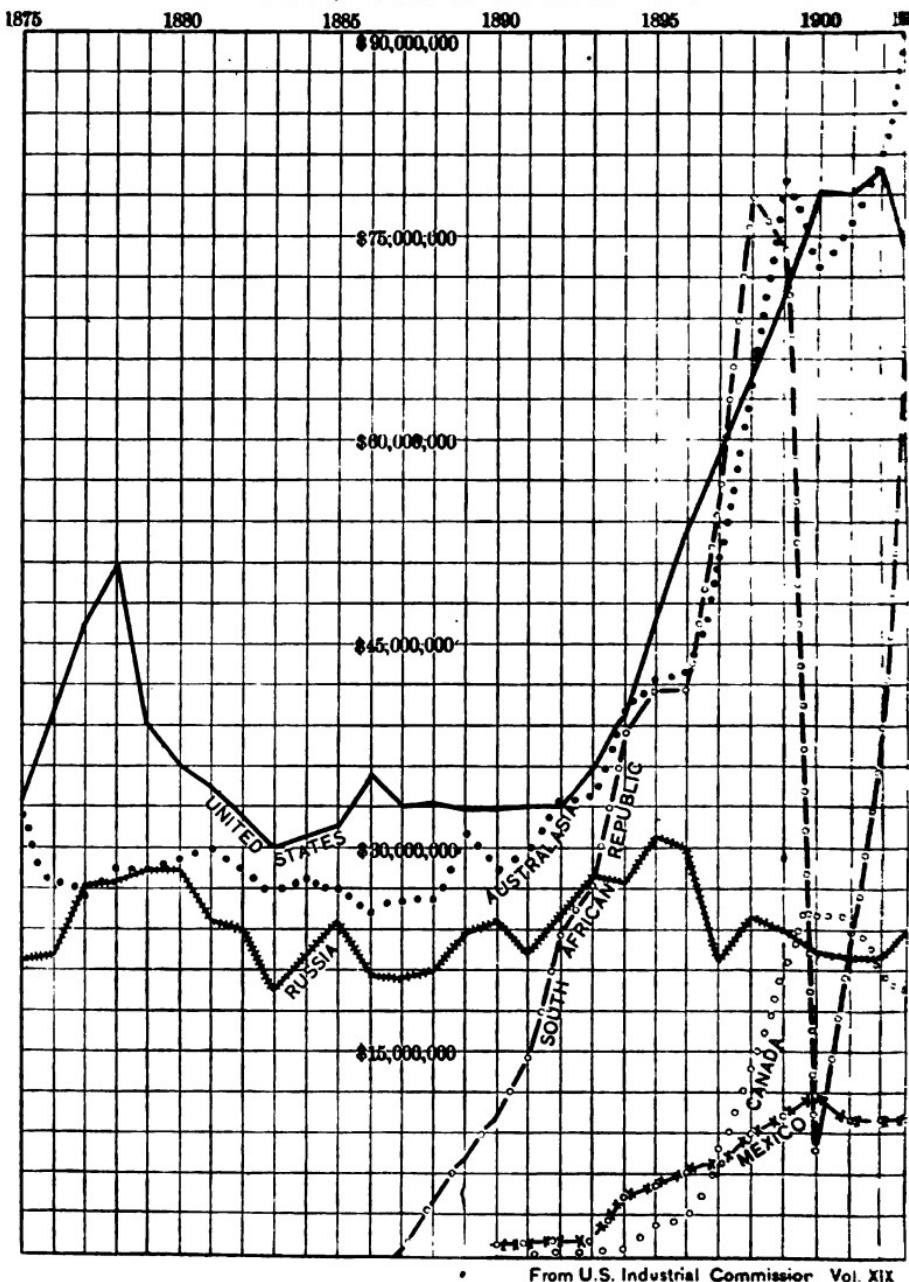


**PRODUCTION OF GOLD AND SILVER IN THE UNITED STATES
FROM 1845 TO 1904.**



From Report of the U.S. Industrial Commission, Vol. XIX

PRODUCTION OF GOLD IN THE PRINCIPAL COUNTRIES OF THE WORLD
FROM 1875 TO 1903; VALUES IN UNITED STATES CURRENCY.



* From U.S. Industrial Commission Vol. XIX

for the United States in particular. In the following table will be found the salient figures illustrating the fall in the price of silver since 1873:

THE FALL IN THE VALUE OF SILVER SINCE 1873.

	Price per oz. of Bar Silver in London.	Bullion Value of Silver Dollar.	Ratio of Silver to Gold.
1873	59 $\frac{1}{8}$ d.	\$1.004	15.93
1875	56 $\frac{1}{8}$ d.	.961	16.64
1880	52 $\frac{1}{4}$ d.	.885	18.05
1885	48 $\frac{1}{8}$ d.	.823	19.41
1890	47 $\frac{1}{4}$ d.	.809	19.75
1895	29 $\frac{1}{8}$ d.	.505	31.60
1900	28 $\frac{1}{8}$ d.	.479	33.33
1901	27 $\frac{1}{8}$ d.	.461	34.68
1902	24 $\frac{1}{8}$ d.	.408	39.15
1903	24 $\frac{1}{4}$ d.	.420	38.10
1904	26 $\frac{1}{8}$ d.	.447	35.70

Finally, it may be of interest to append on page 464 a table, which shows the various countries which furnish at present the world's supply of gold and silver.

It was the fall in the value of silver after 1873 which led to the so-called "silver movement" in the United States. Up to that time the problem had not aroused much popular interest. In 1791 the mint ratio of silver to gold was fixed at 15 to 1, and as gold was slightly underrated, it slowly disappeared from circulation in conformity with the principle to be described in § 192. In 1834 the ratio was changed to 16 to 1, and in 1837 was again slightly modified so as to stand at 15.98 to 1. Silver was now underrated and gradually vanished. By the end of the seventies the market ratio had become 18 or 20 to 1, and gold, now being worth more in the market than at the mint, would have disappeared had not the free coinage of silver been suspended in 1873, by the act which was later on called by the Free Silver advocates the "Crime of 1873."

The silver producers now thought that the fall in the price of silver could be arrested by artificially increasing the demand. They were joined after a time by the Western farmers, who ascribed the fall in the price of wheat to the competition in the silver standard countries, and who believed that the remonetization of silver would increase prices by augmenting the money supply. The results of this union of forces were the Bland-

WORLD'S PRODUCTION OF GOLD AND SILVER IN 1903.

	GOLD.	SILVER.	
		Coining Value.	Commercial Value.
United States . . .	\$73,591,700	\$70,206,000	\$29,322,000
Mexico	10,677,500	91,151,400	38,070,000
Canada	18,834,500	4,072,200	1,700,800
Africa	67,998,100	443,800	185,300
Australasia . . .	89,210,100	12,519,300	5,228,700
Russia	24,632,200	196,300	82,000
India	11,428,900	...	...
Bolivia	1,000	11,597,100	4,843,600
Other countries .	29,153,200	30,185,500	12,677,200
Whole world . . .	325,527,200	220,371,600	92,039,600

Allison Act of 1878, which directed the Secretary of the Treasury to purchase at the market price not less than two nor more than four million dollars' worth of silver per month, and the Sherman Act of 1890, which substituted for this the monthly purchase of four and a half million ounces of silver, to be paid for in treasury notes. In the course of a few years the gradual accumulation of silver drove out the gold, and so endangered the stability of the gold reserve that during the crisis of 1893 the Sherman law was repealed. After several years of violent political agitation and two presidential campaigns, accompanied on the one hand by a progressive fall in the value of silver, and on the other by a rise in

the general level of prices, the gold standard was definitely adopted in 1900.

In the mean time not only had the Latin Union — an assemblage of certain European countries during the last quarter of the nineteenth century to maintain the price of silver by agreeing to the use of a large silver currency — come to an end, but even former silver standard countries like India and Japan went over to the gold standard, the former virtually in 1893, the latter frankly in 1898. Finally, the various countries of Latin America are now on the brink of adopting the gold standard, and some have done so during the past few years.

The project of bimetallism rests upon three fallacies: (1) The first is the idea that there can ever be more than a single standard in actual operation. (2) The next mistake is the theory that government action can fix values. While purchases of silver by a government may temporarily increase the demand, the limit must soon be reached, and the normal influences of value conditions will reassert themselves. The Bland Act of 1878, as well as the Sherman Act of 1890, was impotent to arrest the decline in the price of silver. (3) The final error is the belief that an international agreement would be practicable, even if desirable.

The various international monetary conferences, the free silver movement in America and the Latin Union in Europe were inspired by the belief that the fall in prices was a result of the appreciation of gold due to the demonetization of silver and the resulting insufficiency of money, coupled with the belief that the remonetization of silver would reintroduce the old ratio of 16 to 1. The prodigious increase in the output of gold in recent years has effectually disposed of the belief that there is not enough gold; and the still larger increase in the output of silver has made quite impossible any idea of a return to the old ratio of 16 to 1. There is every probability that the controversy in this form has been laid to rest. Gold monometallism has come to stay.

The endeavor to secure a greater stability of prices through bimetallism or symmetallism¹ may therefore be considered a thing of the past. In order to prevent changes in the relations of debtor to creditor due to fluctuations in the value of money, other standards of deferred payments have been suggested. Among these the most important is the multiple or tabular standard.² The unit of measure would here be the aggregate price of a number of commodities, whose values might be reached by a method of index numbers. Even if such a system were practicable — a fact open to the most serious question — it may be impugned on the general ground that for short-time debts it is not needed and for long-time debts there is no assurance that the two parties will be put in a more equal position than if ordinary money is used. By returning the same amount of goods as is sought to be accomplished by the tabular standard, the advantage of a rise of prices would accrue to the creditor, and that of a fall to the debtor. With all its shortcomings, therefore, the gold standard seems to be the one which involves the least injustice to both. Even where there is an appreciation of the money standard, the increased burden on the debtor tends, as is now well established, to be offset in large measure by a reduction in the rate of interest. Theory, no less than business practice, is emphatic in its support of the gold standard.

¹ Bimetallism means the conjoint use of gold and silver coins; symmetallism contemplates a single coin composed of the two metals.

² Many other standards have been proposed. Walsh, who has devoted an entire volume to this topic, *Fundamental Problem in Monetary Science*, part 4, sums them up as the commodity, wages and cost standards. Edgeworth, in pp. 162–164 of his *Report of 1889*, mentioned in § 186, discusses them under the names of the capital, consumption, currency, income, indefinite, production and wages standards. Kinley, *Money*, ch. xiii, mentions the labor time, labor cost, disutility of labor marginal utility, total utility and purchasers' surplus standards.

192. Distribution of Money.

When different grades of an article can be secured for the same price, individuals use the better one; when different grades of money are in existence, they use the poorer one. If rancid butter is put on the market in competition with good butter at the same price, no one will take it; if poor money is found in circulation with good money, it will drive the other out. The unfit butter is eliminated; the unfit money survives. In the first case the individuals act as buyers, in the second as sellers. The use of money is not its consumption, but its alienation in order to secure things that can be consumed. Hence, so long as the poor money has legal tender equally with the good, individuals can make profits by melting or exporting the latter and paying out the former. This principle is known as Gresham's law.

The name Gresham's law is due to the fact that a Scotch writer, McLeod, who was not familiar with the history of economic thought, happened half a century ago to find the idea in a report to Elizabeth by Sir Thomas Gresham. In reality, it is expressed more fully and forcibly by many of the earlier mediæval writers, not to speak of those of classic antiquity. It applies to three cases: (1) under-weight or debased coin as compared with full-weight coin of the same metal; (2) coin of one metal whose bullion value is less than coin of another metal; (3) paper money as contrasted with metallic money. Gresham's law, however, operates only under two conditions. First, the total amount of money, good and bad, must be in excess of the country's needs. If the poorer money is limited in quantity, the good money may continue to circulate because there is not enough of the other to go around. Secondly, custom or public opinion may force the circulation of the better money, as in the case of the use of gold in preference to greenbacks on the Pacific slope during the civil war and after.

The distribution of metallic money is in large measure the

result of international forces. Some commodities have an international, others only a local, market. The price level in each country is a result of both considerations. Every nation will under normal conditions secure enough money to preserve this relative price level. If there is an abnormal increase in the quantity of gold in one country, it will tend to produce higher prices, augmenting imports of commodities and exports of gold until the equilibrium is restored. There may indeed be many influences to retard this process. If the increased supply of gold comes from the mines, it may be at once exported as a commodity, or it may go to the bank reserves and flow out under banking operations without sensibly affecting the general price level. Moreover, through the intervention of credit transactions (to be discussed in the next chapter), there may be a temporary change in prices, unaccompanied by any movement of gold. But as all credit finally rests on the basis of metallic money, there can be no long-continued disarrangement of the equilibrium without setting into motion the forces working for its re-establishment.

The equilibrium is one between relative price levels, which is only another way of stating the relative amounts of metallic money in each country. Any sudden alteration in the use of credit devices will exert its temporary effect ; but in the long run there is a close relation between the price level and the money supply. Under healthy fiscal conditions, that is, when the currency is on a metallic basis, the amount of money in any country will be self-regulative and adequate to maintain the relative price level. In other words, as we shall see later from another point of view (§ 201), the international distribution of the precious metals accommodates itself to the international trade which would take place if there were no money at all. Since money is the instrument of trade, the distribution of money follows the conditions of trade, and not *vice versa*.

CHAPTER XXIX.

CREDIT.

193. References.

J. S. Mill, *Principles*, bk. iii, chs. xi-xiii; N. G. Pierson, *Principles* (1902), part 2, ch. ii; W. S. Jevons, *Investigations in Currency* (1884), chs. i, v-viii, and *Money* (1879), chs. xvii-xxii; F. A. Walker, *Political Economy* (1888), part 3, ch. vi; T. Veblen, *Theory of Business Enterprise* (1904), ch. v.; C. F. Dunbar, *Chapters on the History and Theory of Banking* (2d ed., 1901), and *Economic Essays* (ed. by Sprague, 1904); D. Kinley, *Money* (1904), chs. xi, xvii; Horace White, *Money and Banking* (2d ed., 1902), bks. ii-iii; W. Bagehot, *Lombard Street* (1873); C. A. Conant, *A History of Modern Banks of Issue* (1896); J. G. Cannon, *Clearing Houses* (1900); F. A. Cleveland, *The Bank and the Treasury* (1905); R. M. Breckenridge, *Discount Rates in the United States* (Polit. Sci. Quart., X. 1905); J. V. Komorzynski, *Die Nationalökonomische Lehre vom Credit* (1903).

CRISES: E. D. Jones, *Economic Crises* (1900); T. E. Burton, *Financial Crises* (1902); Clément Juglar, *A Brief History of Panics in the United States* (trans. by Thomm, 1893); M. von Tugan-Baranowsky, *Studien zur Theorie und Geschichte der Handelskrisen in England* (1901); brief historical details of American crises in D. R. Dewey, *Financial History of the United States* (Am. Citizen Series), passim.

194. The Nature of Credit.

Credit is an exchange or transaction which consists in the temporary transfer of the usance of wealth. The wealth may be composed of concrete goods, of a fund of capital or of a mere right or privilege. The pivotal point is the temporary character of the alienation.

We must be careful not to confuse the legal with the economic conception. Legally, if we part with the ownership of anything, it is a sale; if we part with the possession while retaining the

ownership, it is a loan. Economically, the essence of credit is the temporary usance of wealth. All credit is really loan credit. A sale on credit is, from the economic point of view, no sale at all. Legally, the ownership is transferred and the payment is deferred; economically, it is a grant to the purchaser of the privilege to utilize the commodity subject to the prior economic rights of the seller. The economic alienation does not become complete until the payment is effected, that is, until the credit expires. In the interval there is a temporary usance.

From this fundamental fact flow two consequences: (1) Since the transfer is temporary, it must terminate at a future date. The loan must be repaid, and if in the meantime the subject of the loan has disappeared, its economic equivalent must be returned. The understanding that a payment is to be made in the future in return for something that is done at present is of the essence of credit. All credit is virtually a contract for the future delivery of money or money's worth. (2) The lender must trust the ability of the borrower to meet his obligation at the stipulated date. He must believe, or have credit, in him. All credit rests on confidence,—a confidence which runs through the whole gamut of risk. If a merchant "opens a line of credit" with a customer, his sole security may be the naked expectation that the bill will finally be paid. If an investor parts with his money to a corporation in return for a bond, his security consists in the ultimate right of foreclosing the mortgage. If a banker lends capital, he may demand the deposit of "collateral," that is, securities whose market value may considerably exceed the amount of the loan.

The essence of credit, then, is the right of enjoying something the ultimate economic title to which belongs to another. According to the use made of the enjoyment we distinguish between consumption and production credit. If we borrow money from a friend or pawn a watch in order to buy a meal, the credit is for purposes of consumption. If we borrow funds to increase our business, the credit is for purposes of production.

With the advent of modern economic conditions credit has become to an overwhelming degree productive credit. This explains its advantages and its dangers alike. If the goods, capital or privileges are so utilized by the borrower as to yield a surplus over and above that part of the produce requisite to pay for the use of the loan, credit performs the function of capital and may be deemed equivalent to an increase of capital. In that sense credit might be called auxiliary capital. It does the work of capital because it tends to increase the productive forces of the community. By this is not meant that credit is actually capital, for if the capital is in the hands of the borrower, it is withdrawn from those of the lender. In the hands of the borrower, however, the capital does more good than in those of the lender, for otherwise it would not be transferred. To the lender the capital is, so to speak, passive; to the borrower, active. To the extent that credit puts capital where it is more productive than it would otherwise be, it is equivalent to an increase, or at all events to an increased usefulness, of capital.

On the other hand, if the funds secured through credit are unwisely utilized or dissipated, they diminish the productive forces of the community, because the debtor not only wastes his own efforts, but is unable to replace the borrowed capital. Owing to the facility with which modern credit can be obtained, it is peculiarly susceptible of abuse. If a man has to create or to accumulate capital, he will be moderately careful in its employment; if he secures it on credit, he is more apt to take chances. He is relieved from immediate cares, and is likely to paint the future in roseate hues. Inasmuch as credit rests on confidence, it is human nature, in dealing with the property of another, to have a misplaced confidence in one's self.

Credit, like capital, may be classified into commercial, industrial, agricultural and financial credit. In the broader sense all credit is financial, because money or money's worth must be repaid. So-called commercial credit takes the form of book

accounts, promissory notes and certificates such as dock warrants, grain and cotton notes and warehouse receipts. The instruments for collecting the accounts are known as accounts stated, accounts settled, due bills, commercial drafts and bills of exchange — both sight and time bills. Industrial credit comprises those forms connected with corporate industry such as the various kinds of stock and bonds which represent contingent rather than actual proprietorship. Agricultural credit includes advances made in connection with agriculture. Financial credit in the narrower sense is primarily bank credit. The bank lends its credit, that is, sells a contract for the future delivery of money in the form of bank notes or deposits, while the instruments for transferring the funds are chiefly checks and drafts. Commercial, industrial and agricultural credit all finally converge here, for the bank is the lender *par excellence*. Since modern credit operations centre in the bank, the study of credit is in large measure the study of banking.

195. Credit and Banking.

The function of a bank is to render credit mobile. This is accomplished by the threefold operation of discount, deposit and issue.

(1) A business man finds that in order to meet some past or future obligation he needs funds, consisting not necessarily of money, but of any customary means of payment. If he has sold goods on credit, he usually receives a promissory note consisting, according to the number of indorsements, of single or double name paper. In case of a future rather than a past transaction, the note is called accommodation paper. If the note is considered good, the bank will give him, in cash or in an equivalent right to demand payment, a sum equal to the face value of the note less the interest during the time that the note has to run. This deduction involves a discount, and to discount a note thus means to pay its face value less the interest still to accrue. Legally, the transaction is a sale or exchange of rights:

the bank buys the note or right to demand payment from the maker, and sells to the merchant the right to demand payment from it. Economically, the transaction is a loan, because the bank virtually lends to the merchant the use of the capital represented by the note (less the discount). The borrower, in lieu of presenting some other man's promissory note, may offer either his own note, sometimes accompanied by collateral security, or some other form of negotiable paper mentioned in the last section. The bills receivable or other paper thus acquired by the bank figure among its resources as loans or discounts. They form a part of its assets.

(2) The question now arises as to the shape in which the bank lends its credit. When a bank discounts commercial paper, it may, instead of paying money which the merchant probably does not want, place an equivalent sum to his credit. In other words, it may open in his name an account or deposit which can be drawn out on demand by check. This deposit then becomes a liability of the bank. Deposits and discounts thus figure on opposite sides of the balance sheet.

A deposit may also arise without any discount, as when one hands to a bank a sum of money or its equivalent, receiving in return a right to draw on the bank to this extent. Legally a deposit is therefore a sale of money or money's worth in exchange for a right to demand a corresponding sum. In the case of a special deposit, as when a particular object is deposited in the vaults of the bank for safekeeping, the transaction is legally as well as economically a loan, because the identical thing must be returned. This is, however, more properly a storage warehouse than a banking business.

When a deposit arises without any discount, it is a deposit of money in lieu of a deposit of bank credit. This was, in fact, the original function of a bank, and some important institutions, like the Bank of Amsterdam, were banks of deposit without being banks of discount. Nowadays, however, the deposits in the shape of bank credit far transcend in amount the cash deposits.

In the large cities of Europe and America, where the universal employment of checks results in mutual claims of the various banks on one another, we find a clearing-house, in which the reciprocal claims are adjusted or "cleared," with a payment only of the uncancelled balances. In 1904 the volume of exchanges in the ninety-eight clearing-houses of the United States amounted to the prodigious figure of \$102,150,313,982, over one-half of which was recorded in New York alone. The payment of cash balances between the New York banks was only 5.2 per cent of the aggregate clearings.

(3) Sometimes the borrower who presents the note for discount elects to receive money. In place of giving coin or government paper, the bank may prefer to issue its own promissory notes. These bank notes enter circulation in convenient denominations, and form a part of the currency. As such they will receive attention in § 197. The point to be emphasized here is that so far as the bank and the borrowers are concerned, the economic essence of the bank note is identical with that of deposits. Both are bank liabilities, because the bank must ultimately pay its note or honor a requisition on the deposit; both involve the granting of credit to the borrower who acquires the right to demand payment of a given sum from the bank. The function of issue differs in form, but not in substance, from that of deposit. Bank notes, therefore, as well as deposits are liabilities of the bank in contrast to discounts, which are assets.

Every bank needs a certain amount of capital to inspire confidence. The capital figures on its books as a liability to the shareholders, while the deposits and bank notes are liabilities to the customers. The profits of a bank are derived from the fact that it secures without interest the use of the additional capital represented by the bank notes or deposits, and that it can safely loan on interest or invest a part of this capital in lucrative enterprises.¹

¹ Strictly speaking, the bank makes a slight extra profit through the technical discount itself. If a note for \$10,000 at six per cent has thirty days to run, the bank will deduct \$50 and credit \$9,950. The present

The benefit of the borrower consists in using the bank's credit in lieu of his own capital. Banks fulfil their true function when they extend to their customers the utmost possible credit compatible with solvency. If they are reckless in their discounts, if they accept dubious paper and thus impair their assets, if they unduly extend their deposits or unwisely enlarge their note issue and thus swell their liabilities, they may find themselves unable to meet the maturing claims. In old and conservative communities, banks may sometimes be relied on voluntarily to keep in cash an adequate reserve against their liabilities; in most places, even if it is not true that "free trade in banking is free trade in swindling," experience has shown the need of some governmental supervision.

So far as the reserve against deposits is concerned in the United States, the national banks in the reserve cities are required to keep as a reserve at least 25 per cent of the deposits; in the other cities at least 15 per cent. The reserve must consist of "lawful money," *i. e.* specie or government legal tender. But clearing-house certificates and the cash reserve of 5 per cent of the note circulation kept in the United States treasury may be counted as a part of the reserve against deposits. Moreover, one-half of the reserve of any "reserve city" bank or three-fifths of that of any other bank may consist of cash deposits in any central reserve city bank. The central reserve cities are New York, Chicago and St. Louis. The reserve cities are twenty-eight in number. The events of the last few decades have shown that it is in large measure at this very point that the National Bank Act needs strengthening in order to insure sound banking. The question of reserve against note issues will be treated in § 197.

Where, as in the United States, there are many small banks instead of one large one, the banks in sudden emergencies

worth of \$10,000, however, is $24\frac{1}{2}$ cents more than that; that is, \$9,950.24 $\frac{1}{2}$ at six per cent for thirty days equals \$10,000. This difference accrues to the bank.

sometimes co-operate, and seek to protect their depositors by the system of combined reserves, through the issue of clearing-house certificates. In all cases, however, the solvency of a bank is far more than a matter of concern merely to the shareholders and the immediate customers. The modern bank is, so to speak, the nerve centre of the business world. A shock to its credit at once ramifies throughout the community, and its failure may paralyze enterprises that seem to be only remotely connected with the particular interests involved. The problem of bank reserves is the one of central importance in the subject of credit.

196. Credit and Prices.

It is from this point of view, therefore, that we must approach the question of the influence of credit upon prices. Some writers, like Mill, assert that since credit virtually means purchasing power, credit acts on prices exactly as money does. On the exchanges cotton and wheat futures are no less instrumental in fixing prices than cash sales. So here, instead of transacting business with "spot gold," "gold-futures" or credit are used. The greater the use of credit, the larger the number of purchases and therefore the higher will be the level of prices.

This theory of the substantial identity of credit and money, as purchasing power, overlooks the fact that in a credit operation only one-half of the transaction takes place now. Where money is used the transaction is completed at once,—money and commodities change hands; where credit is used, the commodity changes hands now, but the debt incurred must be paid in the future. In other words, it is a question not simply of purchasing power, but of liquidating power. This consideration has led writers like Walker to assert that credit has no influence at all on prices, because the debts created by such a transaction are ultimately cancelled by the credits.

The truth lies midway between these two positions. If all credit operations were absolutely automatic, and if confidence in

ultimate payment were so complete that actual money were never demanded, credit would be a perfect substitute for money, and influence prices just as money does. In point of fact, however, confidence is never so complete. The banks must always keep a certain amount of money on hand to meet possible demands. The debts, in other words, are never entirely cancelled by the credits because, as the future ripens into the present, the conditions of the market change. There will always have to be a certain balance which a prudent bank must retain. This balance measures the real influence of credit on prices. It is quite true that credit is purchasing power and thus tends to raise prices; but credit is not to the same extent liquidating power. In order to serve as a basis for the credit operations a certain quantity of coin must be impounded as a reserve. Thus the medium of the entire transaction is in the broad sense the credit less the reserve: as purchasing power the credit alone operates, as liquidating power the credit must be supplemented by the reserve. Since the money so reserved is subtracted from what would otherwise enter circulation, there is less money disposable for actual cash transactions, or, in other words, the price level is lower than it would otherwise be. The credit thus tends to raise prices, the reserve to lower prices. The reserve, however, is always much smaller than the credit transactions, for there would otherwise be no advantage in using credit. The net result, therefore, is that credit raises prices to a certain point.

Credit, in other words, although it exerts by no means the same amount of influence on price that money does, exerts the same kind of influence. The reason that it does not exert the same amount of influence is that a portion of its ideal efficacy as a substitute for money is lost through the necessity of keeping on hand a reserve for which no substitute can be employed. The extent of this reserve is a measure of the incompleteness of the substitution, and therefore of the degree to which credit fails to equal money in affecting price. The differ-

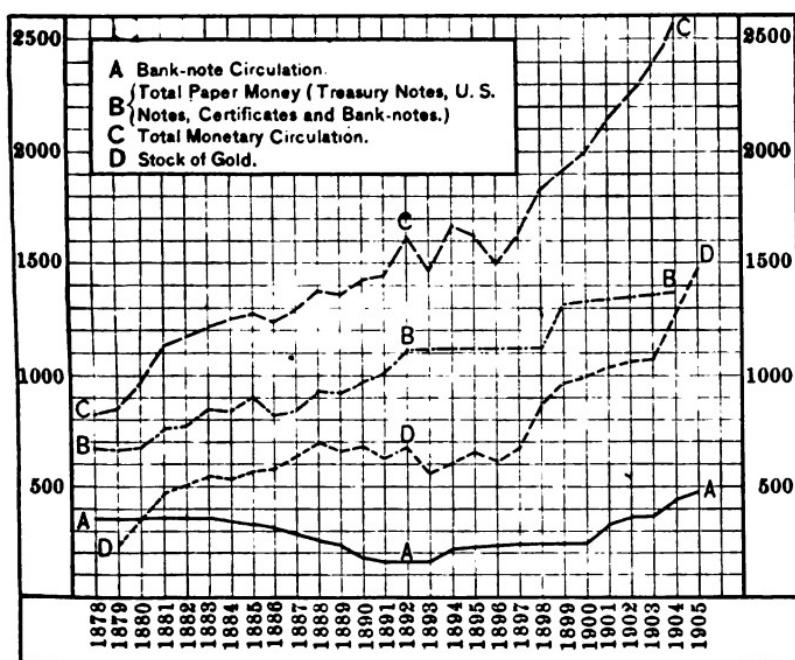
ence between a "wheat-future" and a credit or a "gold-future" is that a reserve is unnecessary in the one case, but requisite in the other.

This also serves to explain why credit cannot increase prices indefinitely. It is indeed true that an enhanced use of credit marks a period of rising prices. It is precisely in such times, however, that prudent bankers will be solicitous about their reserves and make every effort either to increase their reserves or to diminish their loans. Money becomes "tight," the rate of discount rises and the increase of price tends to arrest itself. A speculative mania may indeed supervene, and prudence for a time be cast to the winds, with a dangerous discrepancy between bank liabilities and quick assets. This will, however, lead to a crisis, to be discussed in § 198; and when the bubble of inflated values is inevitably pricked, the price level will again fall. All prices must finally be reduced to the basis of metallic money, and with a given quantity of money the oscillations in the price level, so far as the effect of credit is concerned, depend on the proportion between the money in circulation and that used as a reserve for credit transactions.

197. Credit and Currency.

We have seen (§ 188) that all non-metallic money is of three kinds: representative, fiat and bank money. From another point of view it may be classified as government and bank money, each again divisible into convertible and inconvertible currency (although in the case of government money the terms redeemable and irredeemable paper are customary). In Europe almost the entire paper circulation is composed of bank notes; in the United States, as a result partly of accident, partly of the silver movement at the close of the nineteenth century, partly of a certain ungrounded suspicion on the part of the public toward the national banks, over three-fourths of the circulation consists of government currency. This comprises three classes: (1) the United States notes, or greenbacks, dating from the

BANK-NOTES, PAPER MONEY, GOLD
AND TOTAL MONETARY CIRCULATION
IN THE U.S. FROM 1878 TO 1905.



civil war, and legal tender for all debts except customs duties and interest on the debt and redeemable in coin since 1879; (2) gold certificates issued upon deposit of gold coin or bullion, not legal tender, but receivable for customs, taxes and all public dues; and (3) silver certificates issued in return for silver dollars and likewise not legal tender. The treasury notes of 1890, as stated on page 453, have now almost disappeared. On July 1, 1905, the government notes in existence amounted to 1,340, the bank notes to 498, millions of dollars. On the table on pages 480-481 will be found a comparative statement of the paper circulation of the United States from 1860, and in the chart opposite page 478 will be found the details of the bank note, paper money and total monetary circulation since 1878.

The great advantage of a carefully guarded government currency is absolute security. The convertibility of all the United States issues, for instance, is now insured by law. The act of 1900 imposes on the Secretary of the Treasury the obligation to maintain all other forms of money at parity with gold, and to this end assigns for such redemption purposes a special reserve fund of 150 million dollars of gold, to be replenished in case of need by sale of bonds. On the other hand, the disadvantage of government paper is a certain rigidity or incapacity of such circulating medium to adjust itself automatically to the varying needs of the business community. It is to bring about the desired elasticity that recourse is usually taken to bank currency.

Bank currency, as we have seen, is of two kinds, deposit currency (in the shape of checks) and note currency. The former is by all means the more important. In the United States national bank deposits are ten times as large as the note circulation. In fact, in the larger cities the banks usually issue no notes at all. Checks are, however, commonly presented for payment after a very few transfers. Even though they are now extensively used in America for retail transactions, bank notes

COIN AND PAPER CIRCULATION OF THE UNITED STATES FROM 1860 TO 1904 WITH AMOUNT OF CIRCULATION PER CAPITA.

Year.	Coin, including Bullion in Treasury.	United States Notes and Bank Notes.	Total Money.	Circulation.	Population.	Circulation per Capita.
1860	\$235,000,000			\$6,695,225		\$13,85
1861	250,000,000	203,005,767	452,005,767	4,48,495,767	32,064,000	13,98
1862	25,000,000	333,452,079	358,452,079	23,754,335	32,704,000	10,23
1863	25,000,000	649,387,283	674,867,283	79,473,245	33,365,000	17,84
1864	25,000,000	689,588,067	705,588,067	35,946,589	66,941,478	34,046,000
1865	25,000,000	745,129,755	770,129,755	55,426,760	714,702,995	20,57
1866	25,000,000	729,327,254	754,327,254	80,39,010	67,348,244	35,469,000
1867	25,000,000	703,260,612	728,260,612	66,208,543	66,1,992,069	18,28
1868	25,000,000	691,553,378	716,533,378	36,449,917	68,103,661	36,973,000
1869	25,000,000	690,351,180	711,351,180	50,898,289	66,4,452,891	37,756,000
1870	25,000,000	697,858,461	722,868,461	47,655,667	67,5,212,794	38,558,371
1871	25,000,000	716,812,174	741,812,174	25,923,169	715,889,005	39,555,000
1872	25,000,000	731,721,65	762,721,65	24,413,016	738,309,549	40,98,000
1873	25,000,000	749,445,610	774,445,610	22,563,801	751,88,309	41,677,000
1874	25,000,000	781,024,781	806,024,781	29,941,750	776,63,931	42,796,000
1875	25,000,000	773,223,59	798,273,59	44,171,562	754,10,97	43,951,000
1876	52,418,734	738,264,550	790,683,284	63,073,896	727,669,388	45,137,000
1877	65,377,506	697,216,341	723,053,847	40,738,964	46,353,000	15,58
1878	102,047,907	687,743,069	789,790,976	60,658,344	729,132,634	47,198,000
1879	357,268,178	676,372,713	1,933,640,891	215,009,098	85,6,31,791	15,32
1880	494,363,884	691,186,443	1,185,550,327	212,168,099	973,382,228	50,155,783
1881	647,868,682	701,723,691	1,349,592,373	1,114,238,119	51,316,000	21,71
1882	703,974,839	705,123,050	1,409,197,889	235,154,254	52,195,000	22,37
1883	769,740,045	702,734,494	1,472,494,649	1,472,494,649	1,472,494,649	1,472,494,649

1884	801,068,939	1,487,249,838	243,323,869	1,243,925,969	54,911,000
1885	872,175,823	1,537,433,550	244,864,935	1,292,558,615	56,148,000
1886	903,027,304	1,561,107,774	308,707,249	1,252,700,525	57,104,000
1887	1,007,513,901	1,633,412,705	315,873,562	1,317,539,143	58,680,000
1888	1,092,391,690	1,691,141,027	319,270,157	1,372,179,970	59,974,000
1889	1,160,012,434	1,658,079,791	278,310,764	1,380,361,649	61,289,000
1890	1,152,471,638	1,665,123,429	255,872,159	1,429,231,270	62,622,250
1891	1,112,956,637	1,677,794,044	180,353,337	1,497,440,707	63,947,000
1892	1,131,142,260	621,076,937	1,732,219,197	150,872,010	1,601,347,187
1893	1,066,223,357	672,583,115	1,738,868,472	142,107,227	1,596,701,445
1894	1,098,958,741	706,120,240	1,805,078,961	144,270,253	1,660,838,708
1895	1,114,999,106	704,480,451	1,819,319,557	217,391,084	1,601,968,473
1896	1,097,610,190	702,364,343	1,799,975,033	293,540,067	1,506,434,966
1897	1,213,780,289	692,216,339	1,905,986,619	265,787,100	1,640,209,519
1898	1,397,785,969	675,788,773	2,073,574,442	235,714,547	1,837,859,955
1899	1,508,543,738	681,550,167	2,190,963,905	286,022,024	1,904,077,881
1900	1,607,352,213	732,348,460	2,339,700,973	284,549,675	2,055,159,998
1901	1,734,861,774	748,266,203	2,483,067,977	307,760,015	2,175,307,962
1902	1,839,913,551	733,313,107	2,556,286,058	313,876,107	2,249,390,551
1903	1,995,116,321	779,594,666	2,684,710,987	317,018,818	2,367,692,169
1904	1,994,010,024	808,894,111	2,803,504,135	284,361,275	2,519,142,860
					30,77

NOTE 1.—Specie payments were suspended from January 1, 1863, to January 1, 1879. During the greater part of that period gold and silver coins were not in circulation except on the Pacific coast, where, it is estimated, the specie circulation was generally about \$35,000,000. This estimated amount is the only coin included in the above statement from 1862 to 1875, inclusive.

NOTE 2.—In 1876 subsidiary silver again came into use, and is included in this statement, beginning with that year.

NOTE 3.—The coinage of standard silver dollars began in 1878, under the act of February 28, 1878.

NOTE 4.—Specie payments were resumed January 1, 1879, and all gold and silver coins, as well as gold and silver bullion in the Treasury, are included in this statement from and after that date.

NOTE 5.—For redemption of outstanding certificates an exact equivalent in amount of the appropriate kinds of money is held in the Treasury, and is not included in the account of money held as assets of the Government.

NOTE 6.—This table represents the circulation of the United States as shown by the revised statements of the Treasury Department for June 30 of each of the years specified.

are obviously more convenient for ordinary circulation and especially for small sums.

Since, therefore, in most countries bank notes are preferred to government notes, the regulation of note issue has aroused much discussion. There have been two theories, known respectively as the currency and the banking principle. The currency principle states that whereas in the case of a metallic currency all the specie cannot be exported, for the reason that, as the coin goes out, prices will fall, exports increase and money again flow in, on the other hand an issue of bank notes may expel the specie because the total volume of money, now composed of coin and notes, will be at least no smaller than before. On the contrary, the banks, it is alleged, will put into circulation more notes than the specie displaced, and there will soon be a premium on gold. Hence, to prevent the notes from becoming redundant and thus ultimately inconveritible, safeguards must be adopted against overissue.

The weakness of this reasoning lies chiefly in overlooking the fact that bank deposits act precisely like bank notes. The advocates of the banking principle pointed out that if the banks could affect prices and the stock of coin by increasing their note issue, they could do the same by expanding their deposits. A restriction on note issue would therefore in itself be futile. In point of fact the banking theorists denied that inflation was possible in either case, since both notes and deposits are issued in response to an actual demand. As long as bank paper is convertible, they claimed that there can be no redundancy, because if there were an overissue, that is, an issue greater than the real demand, the notes would at once automatically return to the bank. Hence, so long as the ordinary principles of good banking are observed, no safeguards are needed.

The truth again lies in the middle. The banking theory was undoubtedly correct in emphasizing the analogy between notes and deposits, and in stating that the aggregate of currency is not likely to be permanently increased by an issue of notes. It

failed, however, to observe that as the bank notes are returned to the bank, specie may be paid out in exchange, and that while the aggregate circulation may remain the same, its proportions may be altered. Even though the redundant notes automatically return to the bank, it is precisely this return which may exhaust the coin reserve and thus jeopardize the entire issue. From the point of view of bank solvency a perilous discrepancy between reserve and liabilities may be brought about by a diminution of the reserve as well as by an increase of the liabilities.

As a consequence, all nations impose some restrictions on bank issues. These are of four chief kinds: the maximum amount, the definite reserve, the bond deposit and the safety fund method.¹

(1) A good example of the first method is that employed by France. The only limitation placed upon the Bank of France is the fixing of the note issue at a maximum which since 1893 has been put at four thousand million francs. This method, however, reverses the true principle, restricting what should be left free and leaving free what should be restricted. As long as the reserve increases with the note issue, there is no reason why an absolute maximum should be established.

(2) The control of the reserve may be brought about by the provision for a fixed or a variable percentage. The fixed percentage is typified in the Swiss banks and in the Bank of the Netherlands, where the specie reserve is placed at forty per cent. In the latter case, however, the reserve applies to deposits as well as to notes. The variable percentage is illustrated in Great Britain and Germany. According to Peel's Act of

¹ Jevons, *Money*, 218-235, mentions fifteen different methods: the simple deposit, the partial deposit, the minimum reserve, the proportional reserve, the maximum issue, the elastic limit, the documentary reserve, the real property reserve, the foreign exchanges, the free issue, the gold par, the revenue payments, the deferred convertibility and the paper money method. They may, however, be substantially reduced to those mentioned in the text.

1844 the issue of uncovered notes by the Bank of England is limited to fourteen million pounds. For each additional note there must be kept a corresponding amount of coin. This act has, however, been suspended several times in periods of great crisis. As the other banks of England and Wales abandon or forfeit their old right to issue notes, two-thirds of the uncovered amount authorized accrue to the Bank of England. As a result, the authorized uncovered issue of the bank has risen to £17,775,000. The country banks' issues are now under three millions; that of the Bank of England about sixty millions of pounds. In the German banks the uncovered authorized issue was fixed at three hundred and eighty-five million marks, with an obligation similar to that of England, but with these differences: (a) that the reserve for additional notes must be one-third in coin and two-thirds in bills of exchange; and (b) that additional notes may be issued without any covering, but subject to a tax of five per cent. This provides for a certain elasticity lacking in the English law. To the Reichsbank was originally (1875) apportioned two hundred and fifty of these three hundred and eighty-five millions. As the other banks abandoned their right of issue, that of the Reichsbank grew until in 1900 it amounted to almost three hundred millions of marks.

(3) The bond deposit system is that of the United States. Under the National Banking Act of 1863, in this respect following the principle of the New York Free Banking Law of 1838, the national banks, which by the operation of a ten per cent tax on other bank notes acquired practically the sole right of note issue, are required, in case they desire to issue notes, to deposit with the Secretary of the Treasury government bonds. Under the original free banking system the circulation might be secured by the deposit of real estate mortgages as well as of bonds. In return the national banks receive the right to issue notes equal in amount (since 1900) to the par value of the bonds, but not exceeding their market value nor the capital stock of

the bank. Furthermore each bank must since 1874 keep at the treasury a sum equal to five per cent of its circulation, to form a redemption fund, and is subject to a tax of one-half of one per cent on the outstanding issue. This system affords absolute ultimate security for the bank notes, but does not provide for sufficient elasticity nor perhaps for immediate convertibility. A better method to insure such immediate convertibility would be the provision, as in the case of the "Suffolk Bank System" in New England from 1819 to 1866, that no bank should pay out any notes except its own. The National Bank currency is in effect paper money issued by the government through the medium of the banks.

(4) The safety fund system is the one in vogue in Canada and formerly found in parts of the United States. It originated in New York in 1829. Under this method each bank contributes to a common fund a certain percentage of its capital (in Canada five per cent) which is to be applied to the redemption of the notes of any insolvent bank. It is a kind of mutual insurance system, which tends to provide an equally safe currency without interfering with the elasticity of the circulation or tying up the capital of the bank. The fund of three per cent formerly required in New York was until 1842 a security for deposits as well as for notes, and accordingly proved to be inadequate. On the table on the next page will be found the chief statistics which illustrate the relation of reserve to notes and deposits in the principal banks of the world.

In the United States the whole question of note issue is becoming of secondary importance. There are four stages in the machinery of exchange: barter, commodity money, paper money (bank and government notes) and bank credits in the shape of deposits. In the American commercial centres the demands of business men for means of payment are satisfied to an overwhelming extent by the fourth method, and, as we have seen, even in the case of paper currency government notes constitute over three-quarters of the entire amount. It seems

probable that the legitimate demand for elasticity will be met not by any radical change in the system of bank note issue such as an "asset currency" (that is, currency secured only by ordinary banking assets), but by an improvement in the methods of

CONDITION OF PRINCIPAL BANKS ON JUNE 30, 1904,
IN MILLIONS OF DOLLARS.

	Capital.	Gold.	Silver.	Total Specie.	Circulation.	Deposits.	Deposits belonging to Treasury.	Loans.
Bank of England	70.8	170.5	...	170.5	139.3	242.5	43.5	175.1
Other English Banks	280.1	...	...	752.4	3.0	2,974.2	...	1,972.6
Banks of Scotland	45.3	...	...	28.7	36.2	505.1	...	341.2
German Imperial Bank	28.9	...	...	209.9	356.5	130.2	...	267.3
Other German Banks of Issue	15.8	...	...	14.2	32.3	20.9	...	43.5
Bank of France	35.2	535.9	218.6	754.5	832.4	132.0	64.1	246.9
Imperial Bank of Russia	28.3	429.0	43.2	472.2	347.5	70.3	158.0	203.8
Bank of Austria-Hungary	41.9	229.6	62.8	292.4	335.6	31.3	0.6	142.0
Banks of Canada	79.5	...	...	16.2	60.2	475.3	...	508.7
Banks of Australasia	94.1	...	...	143.7 ¹	23.5	609.3	...	591.5
Banks of Central and South America	128.6	...	...	143.0 ²	29.2	373.0	...	342.2
United States:								
National Banks	767.4	111.3	20.7	132.1	449.2	3,422.0	103.0	3,621.8
State Banks	625.1	29.7	10.6	40.3	...	6,688.0	...	4,360.2

discount and by some provision whereby the banks may supplement their own credit by that of the government. The Payne-Aldrich bills of 1903, for instance, permit the Secretary of the Treasury to receive from the banks as security for deposits their reserves in the shape of government and carefully selected state, local and railroad bonds.

It is in periods of crisis that elasticity is most urgently

¹ Includes specie, bullion and cash balances.

² Includes specie, bullion and paper currency.

needed ; and it is precisely in such emergencies that the banks can advantageously invoke the assistance of a stable and solvent government. It is a significant fact that in a country proverbially suspicious of state interference, the government should be playing a constantly enlarging rôle in the satisfaction of currency needs. Through government notes we get security, through bank deposits we obtain credit facility, and through some form of closer co-operation between the banks and the treasury we shall probably secure greater elasticity.¹

198. Credit and Crises.

Crises are sometimes classified as financial and commercial or industrial crises. In point of fact, since the bank is the nerve centre of modern business, all crises are financial crises. What is meant by the alleged distinction is that in some cases attention is directed to the immediate occasion of the crisis in the shape of bad banking or bad currency or stock exchange speculation, while in other cases regard is paid to the underlying cause in the general conditions of business.

Crises are essentially modern phenomena. They are a product of the new system of business enterprise, built up on capital and credit. Sporadic instances are found in earlier centuries, but it is only since the domination of the factory system that crises have become a regular occurrence. During the nineteenth century a certain rough periodicity may be observed in the world crises transmitted from country to country. The important ones were those of 1825, 1836–1839, 1847, 1857, 1873, 1884, 1890, 1893 and 1900.

The surface facts of the phenomenon are familiar. There is a rhythmic movement in all modern business. At a certain period “times are good,” prices rise, all manner of new enter-

¹ The danger of having the treasury interfere directly with the money market was illustrated in the crisis of 1873. The idea sketched above rests on the direct initiative of the banks, supported, however, by the power and credit of the government.

prises are launched, bank facilities are extended, and prosperity is found on every side. Then in the height of this period of exaltation, something happens to disturb confidence. A chance occurrence, a mere rumor, may suffice. Some bank or financial institution considers its credit too heavily engaged or suspects that the collateral deposited with it for loans is inadequate. Just at the flood of the tide, when new demands are constantly being made, it finds itself unable or unwilling to respond. Its refusal intensifies the feeling of insecurity, and with the inability of some important concern to meet its obligations a failure occurs. At once every other institution takes in sail, and endeavors to realize on its collateral; that is, creditors demand payment, and debtors in their frantic effort to pay sacrifice securities, often in vain. Prices fall with a thud, failure succeeds failure, and the panic is complete, carrying in its wake loss and suffering to every part of the economic community. Then follows a period of more or less long continued depression, low prices and "hard times" with chronic unemployment and low wages, until gradually the wave of prosperity again sets in, and the process repeats itself.

According to the point of view from which the subject is approached, the explanation usually given is that of overproduction or underconsumption. The theory of overproduction states, not that there is a general glut of commodities — for that would imply that there can be too much wealth, which is absurd — but that there are more goods than can be sold at a profitable price. Whether this overproduction starts with particular commodities and becomes relative overproduction or extends to all commodities and becomes general overproduction is immaterial. The remedy for crises then would be to produce less, either of certain things or of all things. On the other hand, the theory of underconsumption emphasizes the inability of the consumer to pay enough to keep the industries going. Were the consumer to save less and to spend more, crises might be averted.

The true explanation of crises is somewhat different. The whole problem is one of capitalization. All investment values are, as we know (§ 117), the result of the capitalization of estimated earnings. The factory system is one of mass production for the anticipated market, not of production to order for a given market. Even if it be said that modern steel mills only fill definite orders, it is none the less true that immense plants are constantly being erected in the expectation that orders will come in in the future. A period of good times may be initiated by large orders for some particular business, — due, for instance, to a new navy programme, to internal improvements, to a war or to any other large demand. Prices rise in that business, production increases, the movement spreads to other lines, and the new enterprises are financed by loans from the banks or by the sale of securities on a capitalization proportionate to the anticipated earnings. The psychological character of these credit transactions is such, as we have seen, that the capitalization will inevitably be put too high. The hoped for earnings do not come in an amount sufficient to justify the investment. It becomes necessary to reduce the capitalization to its true market value on the basis of actual earnings. This process of readjustment of overcapitalized values necessarily involves loss ; but readjustment there must be. If the realization of its necessity is sudden, we have a crisis or panic ; if it can be brought about gradually, we have a process of liquidation. In any event there follows a period of depression, which must continue until the readjustment of capitalization to actual earning capacity has become complete.

Crises therefore are not necessarily a result of increased technical production. The important point is not production, but capitalization. The crisis of 1837 was due to the overcapitalization of land values ; the liquidation of 1903 to the overcapitalization of trust values. In neither case was there any increased production. Overproduction may indeed accompany overcapitalization, but the emphasis is to be put on the discrep-

ancy between the investment and the returns. In this sense all crises and depressions are credit phenomena.

Inasmuch as modern business enterprise is based on credit, it is obvious that even an ideal banking and currency system cannot in itself avert crises. It may mitigate the evils by providing great elasticity and preventing the shock of a sudden panic ; but the ultimate readjustment must come. More, however, is to be hoped for from the newer tendencies in the organization of economic life. With the growth of the business unit and the integration of modern industry it is possible to discern the beginnings of a more equitable and better regulated method of enterprise and capital investment. With every decade panics are visibly becoming less severe. Like some of the other economic evils of the nineteenth century discussed in the previous book, financial crises seem to be peculiar to the infancy of the factory system. Here, as elsewhere, the task of the future consists in retaining the advantages of a healthy competition while doing away with its abuses. Rhythmic oscillations in prosperity and adversity will no doubt continue to occur in business life as elsewhere. But with a better grasp of the principles of credit, with an increasing responsibility of promoters to investors, with a more stable demand on the part of the wage-earning consumers, and above all with the more efficient regulation of production through the newer forms of business enterprise we may reasonably look forward to a fairly successful adjustment of capitalization to real earning capacity and to a more complete adaptation of the present to the future. When this stage is reached, credit will be shorn of its lurking dangers and will stand forth in its true light as an unmixed benefit to solid economic progress.

CHAPTER XXX.

INTERNATIONAL TRADE.

199. References.

J. E. Cairnes, *Principles* (1874), part 3; C. F. Bastable, *Theory of International Trade* (4th ed., 1903); G. Clare, *The A B C of the Foreign Exchanges* (1893); A. W. Margraff, *International Exchange, a Practical Work on the Foreign Banking Department and its Administration by American Bankers* (1903); G. J. Goschen, *Theory of the Foreign Exchanges* (7th ed., 1866); F. Y. Edgeworth, *Theory of International Values* (*Econ. Jour.*, IV, 1893); F. Walker, *Increasing and Diminishing Costs in International Trade* (*Yale Rev.*, XII, 1904); R. Giffen, *The Use of Export and Import Statistics*, in his *Inquiries* (1904), ch. ix; T. Bacon, *American International Indebtedness* (*Yale Rev.*, IX, 1900); H. Fawcett, *Free Trade and Protection* (3d. ed 1879); F. W. Taussig, *Tariff History of the United States* (1892), and *State Papers and Speeches on the Tariff* (1892); E. Stanwood, *American Tariff Controversies in the Nineteenth Century* (2 vols., 1903); W. J. Ashley, *Tariff Problem* (2d ed., 1904).

200. Basis of International Trade.

It was long supposed that the principles of international trade differed from those of internal commerce, in that the former was subject to the law of comparative cost and dependent on the existence of non-competing industrial groups. We now know that the law of comparative costs or of reciprocal demand is the explanation of all exchange (§ 95), and that non-competing industrial groups are found in internal industry as well (§ 178). Trade takes place between nations as between individuals, because of relative, not of absolute, advantages. One country A may produce a certain class of commodities more cheaply than B and nevertheless find it profitable to import them, because A can produce other commodities still more cheaply than B. It will be advantageous for A to export the second class of commodities and to receive

pay for them by importing the first. The entire body of economic doctrine elaborated by Ricardo, Mill and Cairnes, tending to show that international trade rests on the equation of reciprocal demand and comparative cost, has no distinctive application to international exchange and therefore calls for no special discussion here.

In only one respect, albeit a most important one, does exchange between nations differ from that between individuals. In both cases indeed a surplus enjoyment is sought. The individual endeavors to obtain this in the form of money, because the more money he has the richer he is. The nation, however, cannot follow this course. The mere accumulation of money is bootless. A nation can do only one of three things with its funds. (1) The money may be hoarded. In modern times, however, this is not done, because public credit is a cheap substitute for government hoards; and because after a relatively insignificant point has been reached, a reserve of coin, whether for currency or for banking purposes, becomes unnecessary or even wasteful. (2) The money may be spent at once. If expended abroad, the purchases must come in as imports; if spent at home, it diverts to profitable home consumption what would otherwise have been available for export. In the one case imports are increased, in the other exports are lessened. (3) The money may enter general circulation. The necessary result of this is to raise the level of domestic prices, to check exports and to augment imports, until the money flows out again and the international level of prices is restored.

It is for this reason that imports must in the long run pay for exports, and *vice versa*. This does not mean that at any given time imports and exports must be equal. The state of reciprocal liabilities between one country and the outside world may be such as to lead to a permanent excess of either exports or imports. It might be supposed that an excess of imports would represent profits on the transaction. One nation A may sell its goods abroad at an advantage, and may elect to bring

in its gains in the shape of additional goods, which would then constitute a surplus of imports. Ordinarily, however, the other nation B will do the same, so that on the second transaction there will be a surplus of exports from A to B. Assuming the gains to be equal, these will balance each other. Thus, while both parties secure a surplus of satisfaction, there will be no excess of exports or imports.

On the other hand, it must be remembered that goods are exchanged not only for goods, but for services. If a country performs valuable services for others, they must be remunerated, and the payment will ultimately assume the form of extra imports. England, for example, at the present time does at least three things for the rest of the world. (1) The British merchant marine is so immense that a large amount of trade between other countries is carried on in British bottoms. The freights paid by foreigners go to swell British imports. (2) The British system of marine insurance is so much more admirably organized than that of other countries, that a great part of the ships and cargoes of other countries are insured by British firms. The profits of this business also increase the volume of imports. (3) International debts, as we shall see in § 201, are liquidated largely by the purchase of bills of exchange on London. The commissions to the London bankers again reach England in the form of imports. Freights, insurance profits, and commissions together amount to a few hundred millions of dollars a year. Finally, it must not be forgotten that in modern times international transactions take place in securities as well as commodities. If a nation has invested heavily in foreign bonds, government or industrial, the interest on the invested capital will accrue in the shape of imports. Another portion of the vast surplus of British imports is ascribable to this fact.

The so-called favorable balance of trade is for several reasons a delusion. It is difficult to state with accuracy the exact relation between exports and imports: for (*a*) where there is a long frontier or seacoast, it is wellnigh impossible to include

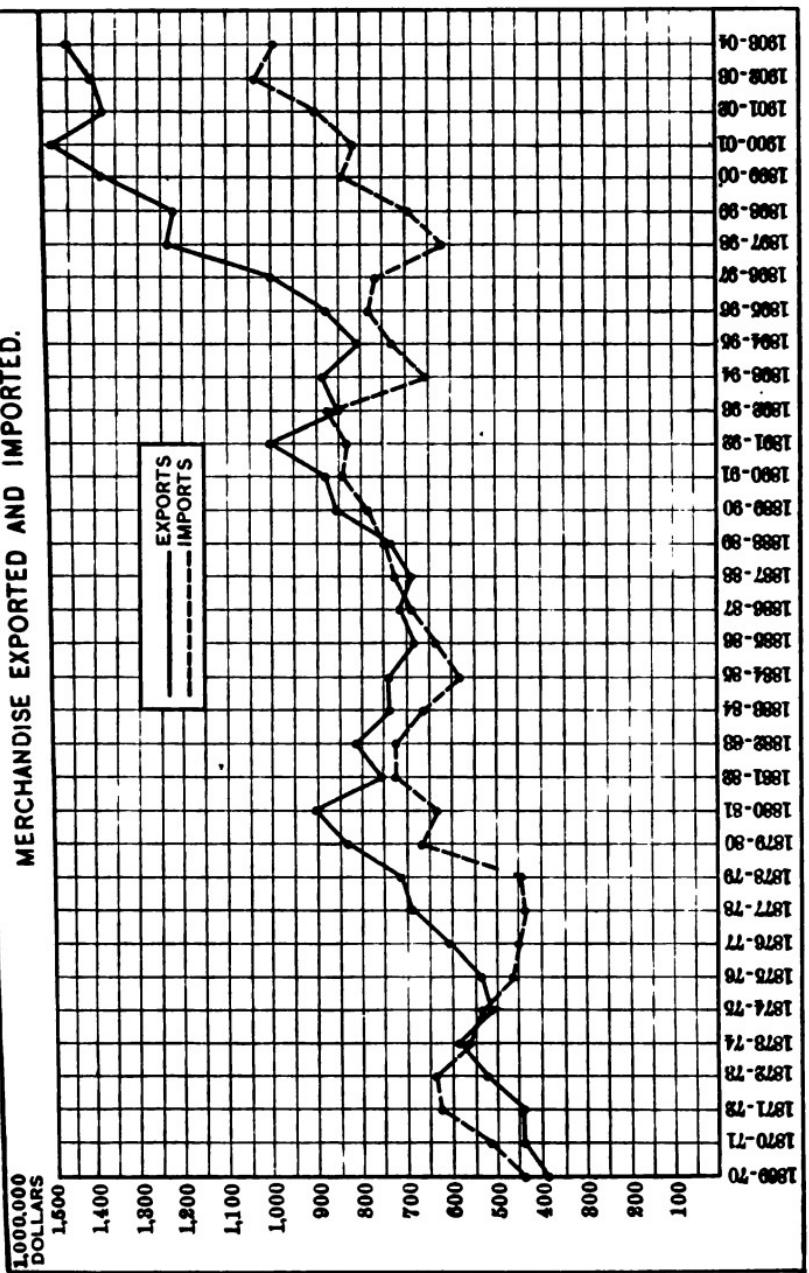
everything; (*b*) even where everything is included, there is no assurance against fraud or undervaluation; and (*c*) there is no uniformity as to whether values should be calculated at the place of export or of import, that is, whether cost of transportation should be included. The statistics themselves are therefore of dubious value. Even if the balance could be accurately ascertained, however, it would not tell us anything of importance. Some prosperous countries, like England, Germany and France, habitually import far more than they export; some poor countries, like Peru, Siam and San Domingo, habitually export more than they import. The following table will show the relation of exports to imports in the principal countries of the world:

THE RELATION OF EXPORTS TO IMPORTS IN
THE PRINCIPAL COUNTRIES.

	Year.	Imports.	Exports.	Excess of Exports (+) or Imports (-).
United Kingdom	1903	Dollars. 2,640,564,000	Dollars. 1,415,179,000	Dollars. -1,225,385,000
Germany	1903	1,428,640,000	1,193,483,000	-235,157,000
France	1903	926,632,000	820,685,000	-105,447,000
Netherlands	1903	912,376,000	781,750,000	-130,626,000
Belgium	1903	512,679,000	407,295,000	-105,384,000
Italy	1903	359,358,000	292,867,000	-66,491,000
Switzerland	1903	230,860,000	171,485,000	-59,375,000
Japan	1903	157,935,000	142,411,000	-15,579,000
United States . . .	1904	991,087,000	1,460,827,271	+469,7,77900
Russia	1902	308,563,000	443,016,000	+134,503,000
British India	1902-3	278,054,000	409,535,000	+131,481,000
Brazil	1903	120,747,000	180,219,000	+59,472,000
Egypt	1903	82,811,000	96,584,000	+13,733,000
Roumania	1903	52,095,000	68,637,000	+16,542,000
Siam	1902	15,782,000	21,103,000	+5,321,000
Haiti	1901	5,500,000	12,760,000	+7,260,000

The table on the following page and the chart opposite will show the conditions in the United States for the past thirty-five years:

MERCHANDISE EXPORTED AND IMPORTED.



From Report on the Foreign Commerce and Navigation of the U.S., 1905.
(U.S. Dep't. of Commerce and Labor.)

**EXPORTS AND IMPORTS OF MERCHANDISE,
UNITED STATES.**

Years ending June 30.	Total Exports.	Imports.	Excess of Ex- ports over Imports.	Excess of Imports over Exports.
1870	\$392,771,768	\$435,958,408	.....	\$43,186,640
1871	442,820,178	520,223,684	.....	77,403,506
1872	444,177,586	626,595,077	.....	182,417,491
1873	522,479,922	642,136,210	.....	119,656,288
1874	586,283,040	567,406,342	\$18,876,698	.....
1875	513,442,711	533,005,436	.....	19,562,725
1876	540,384,671	460,741,190	79,643,481	.....
1877	602,475,220	451,323,136	151,152,084	.....
1878	694,865,766	437,051,532	257,814,234	.....
1879	710,439,441	445,777,775	264,661,666	.....
1880	835,638,658	667,954,746	167,683,912	.....
1881	902,377,346	642,664,628	259,712,718	.....
1882	750,542,257	724,639,574	25,902,683	.....
1883	823,839,402	723,180,914	100,658,488	.....
1884	740,513,609	667,697,693	72,815,916	.....
1885	742,189,755	577,527,329	164,662,426	.....
1886	879,524,830	635,436,136	244,088,694	.....
1887	716,183,211	692,319,768	23,863,443	.....
1888	695,954,507	723,957,114	.....	28,002,607
1889	742,401,375	745,131,652	.....	2,730,277
1890	857,828,684	789,310,409	68,518,275	.....
1891	884,480,810	844,916,196	39,564,614	.....
1892	1,030,278,148	827,402,462	202,875,686	.....
1893	847,665,194	866,400,922	.....	18,735,728
1894	892,140,572	654,994,622	237,145,950	.....
1895	807,538,165	731,969,965	75,568,200	.....
1896	882,606,938	779,724,674	102,882,264	.....
1897	1,050,993,556	764,730,412	286,263,144	.....
1898	1,231,482,330	616,049,654	615,432,676	.....
1899	1,227,023,302	697,148,489	529,874,813	.....
1900	1,394,483,082	849,941,184	544,541,898	.....
1901	1,487,755,557	822,673,016	665,082,541	.....
1902	1,381,719,407	903,320,948	478,398,413	.....
1903	1,420,141,679	1,025,719,257	394,422,442	.....
1904	1,460,868,185	991,090,978	469,777,267	.....

Finally, the following table will show the proportion of United States exports and imports to and from the various parts of the world :

PERCENTAGE OF IMPORTS AND EXPORTS FROM
AND TO GRAND DIVISIONS.¹

	Year ending June 30.				
	1891.	1894.	1897.	1900.	1904.
Europe :					
Imports	54.36	45.05	56.26	51.84	50.32
Exports	79.68	78.56	77.39	74.60	72.42
North America :					
Imports	19.32	25.49	13.85	15.30	20.06
Exports	10.92	13.42	11.89	13.45	16.08
South America :					
Imports	14.05	15.29	14.04	11.02	12.14
Exports	3.81	3.72	3.21	2.79	3.47
Asia :					
Imports	8.55	10.10	11.41	16.45	14.48
Exports	2.89	2.34	3.74	4.66	4.12
Oceania :					
Imports	3.04	3.28	3.19	4.07	2.05
Exports	2.10	1.34	2.16	3.11	2.25
Africa :					
Imports .....	.50	.53	1.25	1.32	.95
Exports .....	.54	.55	1.61	1.39	1.60

An excess of imports may represent the incurring of liabilities to other countries which must be met hereafter, or it may, on the contrary, represent a liquidation of past or present indebtedness by other countries. In the same way an excess of exports may mean that one country is making others its debtors or, on the contrary, it may be a measure of the amount of tribute which that country is paying to others for past or present favors in the shape of capital invested or services rendered. In itself the so-called balance of trade is irrelevant.

¹ Report on the Foreign Commerce and Navigation of the U. S., 1904. Vol. II, p. 1030.

The error consists in confounding a surplus of exports over imports with a surplus of production over consumption. A nation, like an individual, ought indeed to produce more than it consumes, in the sense that the surplus product or surplus energy can be converted into durable capital and thus continually augment the command of man over nature. But the surplus of production over consumption is a very different thing from a surplus of exports over imports.

201. Rate of International Exchange.

International like domestic transactions are settled in terms of money: the machinery for effecting payments differs in magnitude, not in principle. A merchant A in France, let us say, has imported coffee from M in Brazil, while B in France has exported the same value of silks to N in Brazil. Instead of A sending money to M, and N sending it back to B, it is far simpler for A and B to settle with each other in Paris, and M and N in Rio de Janeiro. B accordingly writes an order, known as a bill of exchange, to N directing him to pay M, or, in technical language, B draws on N; A buys this bill from B and remits (*i. e.* sends) it to M, who presents it to N and gets it cashed. Thus no money is exported and only one bill is drawn. Inasmuch as it is not always easy for the M's and N's to find each other in Rio de Janeiro, and the A's and B's in Paris, the business of issuing and purchasing such bills has become the function of the banker and the bill broker. Moreover, since these bills can be transferred by indorsement, they are available for payment not only between France and Brazil, but between any other countries that have dealings with either one. This explains the so-called "three-cornered" exchange, where country A imports from B and pays by drafts on C which has imported from A. Finally, since it is necessary to make out only one transferable order, bills are generally drawn on that country which possesses the larger financial centre. In fact, the great mass of bills especially in the case of exchanges between less important countries, are to-day drawn

on London in pounds sterling. This is due chiefly to the immense volume of British trade, to the stability of the British currency, and to the fact that the seller of a bill on London can almost invariably count upon finding a buyer on advantageous terms.

Where the reciprocal liabilities of two countries are precisely equal, that is, where the payments to be made exactly balance each other, exchange is said to be at par. This means that the amount of bullion paid for a bill in one country is the exact equivalent of the value of the bullion received in the other country. The fine gold in a pound sterling, for instance, is equal to the fine gold in \$4.86 $\frac{2}{3}$; hence the par of exchange between England and the United States is \$4.86 $\frac{2}{3}$. It is obvious that deviations from the par are due to changes in the condition of reciprocal liabilities, which, owing to the continual oscillations of the market, are never for any length of time precisely equal. On some days or seasons there will be a balance in one direction and the demand from would-be purchasers of bills exceeds the supply. At other times the supply of bills offered for sale will exceed the demand. According to these fluctuations bills become dear or cheap, and exchange will be above or below par. The meaning of the phrase "a rise or fall in the rate of exchange" depends on whether, in quoting the par, the base line is the domestic or the foreign unit. Thus in London the par of exchange with some countries is quoted in pence; with others in the currency of those countries, like francs or marks. In the United States the par is generally quoted in dollars, so that when exchange is said to rise it means that purchasers of bills must pay more dollars because there is a greater demand for remittances to settle obligations abroad. The limits within which the rate of exchange can deviate in either direction from par are called the "gold points," that is, the points beyond which it becomes profitable to export or to import gold in settlement of the balance. It is only in exceptional instances, as in the case of a very stringent money market when dealers are ready to sell bills at a

sacrifice or when there is a short-lived difficulty in a gold-producing country converting its bullion into coin, that it is possible for exchange to fall below the specie point, or to rise above it.

When the exchanges are not calculated on a gold basis, the deviations are such that we cannot properly speak of a par at all. If a gold standard country trades with a silver standard country, the par itself fluctuates with the daily change in the gold price of silver. The same is true of a depreciated paper currency, where a new limit to the rise in the price of bills is fixed by the premium on gold.

In the United States, foreign bills are known as documentary and finance bills. Documentary bills are those drawn against the export of commodities, payable at sight or on the expiration of three, ten, thirty, sixty or ninety days. They have attached to them as security the bill of lading, insurance certificates, shippers' invoices, and occasionally other documents like consular certificates, certificates of origin or government inspection certificates. Finance bills are those drawn by American bankers on their European correspondents. They are often covered by collateral security in the shape of stocks or bonds listed on the New York stock exchange. The ordinary causes of an over-supply of "foreign bills" are : (1) large exports of cotton, wheat and corn, especially from August to November of each year; (2) heavy purchases of American securities by European houses; (3) high interest rates in New York. In the latter case American bankers find it profitable to issue sixty or ninety day bills on London and "sell sterling," loaning the proceeds on Wall Street. If the interest rate in New York is six per cent and the discount rate in London three per cent, there will be a profit over and above the commissions of the drawees and the British stamp taxes. In order to eliminate the risk of having to pay a higher price for the sterling draft required when the loan matures, they buy at once a foreign exchange "future" or demand draft for future delivery. These foreign exchange "futures" perform the

same function as the wheat and cotton futures described in § 155.

Since the rate of exchange depends on reciprocal liabilities, anything that affects temporary indebtedness causes the rate to fluctuate. If we were to strike a balance sheet in the foreign trade of any country, we should have to put on the credit side not only the exports of commodities, but such items as freights, commissions, brokerages, the excess of insurance premiums over payments, loans from a foreign country, interest on loans to a foreign country, profits on capital invested abroad, the amount drawn on letters of credit belonging to travellers from abroad, the sums brought in by immigrants, sales of securities, and the gains made on arbitrage operations. All these items act on the rate of exchange precisely as do exports; that is, they tend to diminish the demand for bills or to reduce the rate of exchange, and they require additional imports to restore the equilibrium. So on the debit side we must put not only the imports, but the purchases of securities, the loans to a foreign country, the interest on loans from abroad, letters of credit issued to travellers going abroad and the like. These tend to increase the demand for bills and to raise the rate.

Gold will therefore be exported or imported only when it is necessary to restore the equation of international indebtedness. This equation or equilibrium, however, as has just been explained, is not between exports and imports but between credits and liabilities. The equilibrium is attained when the credits balance the liabilities, and may be perfectly compatible with an excess of either imports or exports. Unless there are special causes arising out of some defects in the currency system itself, as, for instance, during the period of the silver agitation in the United States, especially from 1894 to 1896, gold will be exported when the liabilities for a time exceed the credits, but not necessarily when the imports exceed the exports. The permanent international distribution of the precious metals is therefore dependent on the conditions of international trade in the broadest sense. Thus we reach

from another point of view the conclusion reached above (§ 192), that no country on a sound currency basis can permanently have more or less money than it needs.

202. Growth of Free Trade.

By free trade is meant nowadays the freedom of international trade from interference by government restriction or prohibition. Originally, however, the demand for freedom of trade applied as well to internal commerce. In classic Rome the *portoria* comprised all classes of taxes on transportation. In mediæval Europe town was shut off against town and province against province by burdensome tolls and interdictions, and at every point on the land and water highways large sums were exacted, just as strangers who to-day traverse the region of some mid-African potentate are required to pay exorbitant passage fees. The origin of interference with trade is thus to be sought in the double reason,—the primeval assumption, of which there are still so many survivals, that strangers are synonymous with enemies, and the opportunity of securing a simple and abundant revenue. With the growing recognition of the mutual advantages of an unimpeded traffic, and with the discovery of other equally good sources of income, these relics of a more primitive economic life gradually disappeared. In the United States the results of the commercial jealousy among the states that had just won their independence were so disastrous that the new constitution of 1789 made it impossible for any commonwealth to interfere with interstate commerce. Freedom of internal trade is now assured in the whole civilized world, subject only to necessary police regulations.

Even in the sense of international commerce, however, free trade signifies at present something quite different from what it denoted in former centuries. In the middle ages the liberty of exporting commodities was often restricted to especially selected individuals or companies or limited to certain localities,

as in the case of the Staple¹ towns in England and her continental possessions. The cry for free trade which arose in seventeenth-century England involved the demand for freedom of export in the sense of freedom from monopolist companies or favored towns (§ 50). It was advanced by the very individuals who were clamoring for protection through high duties on imports. Free trade in the modern sense of free imports was a later conception.

The mediæval impediments to international trade apart from those just mentioned consisted of taxes and prohibitions. In the opening centuries of the middle ages they were applied primarily to exports, and even after "free trade" in the earlier sense had been attained the customs² duties of the European countries still consisted to a large extent of taxes on exports. It was free trade because the duties applied to all individuals alike, and because the goods might be shipped anywhere after payment of the tax. A pronounced increase of import duties, however, was effected by the rise of the Mercantile system in the seventeenth century. With the awakening of the national spirit and the desire to foster domestic industry, restrictions were imposed on the importation of any foreign commodities that might interfere with home production. The system of protection was not new, but it was now applied on a national

¹ The word staple is derived from the German *stapeln*, "to heap up," and was applied to certain commodities which were stored in large quantities in the Steel-yard (*i. e.* the Staple yard, "Stapelhof") which the Hansa towns maintained in London. The list of staple articles which at first comprised chiefly wool, woolfells, tin, and leather, was gradually increased until the number of staple articles at present is considerable.

² The term "customs tariff" has a bizarre origin. The English kings were forced to rely for their revenue, apart from the crown lands, to a very large extent on the export and import duties. These became the customary revenue, until finally Parliament granted various rates known as the Great Customs and the Little Customs. The second part of the modern term was formerly said to be derived from the town of Tarifa on the Mediterranean near the Straits of Gibraltar, where the Barbary pirates held the straits and exacted a graduated scale of passage money from all vessels. More recent etymologists, however, now trace it to the Arabic "ta'rif," or inventory.

scale. In those countries which possessed colonies, like Portugal, Spain, the Low Countries, France and England, it became known as the Colonial system, and only later acquired the name of the Protective or Mercantile system. It consisted of several or of all of the following factors :

(1) Bounties on the raising or export of raw materials in the colonies ; (2) limitation to the mother countries of the export of certain enumerated commodities from the colonies ; (3) prohibition of colonial production of manufactured articles ; (4) high protective or even prohibitory duties on imports of manufactures from abroad ; (5) restriction of the carrying trade between the colonies and the mother country to vessels of the latter. In the case of food the policy of agricultural protection fluctuated between bounties on exports and high duties on imports.

It was in England that the system was carried to an extreme, and it was there that the reaction first came. During the period of the industrial revolution, which, as we know, began in England several decades earlier than elsewhere, Great Britain pursued a policy of the most rigorous industrial protection. Not only were many of the import duties quite prohibitory, but the export of machinery or even of the plans of machinery was absolutely forbidden. Compared with the British tariffs of the end of the eighteenth and the beginning of the nineteenth century, even the most complex of modern tariffs is simplicity itself. When Great Britain had finally attained a virtual monopoly of the chief industries and had established her supremacy on the ocean, she naturally found it to her interest to let down the bars. Not fearing foreign competition any longer at home, her great need was to secure an outlet for her surplus products. Moreover, the transition from the agricultural economy to the factory system had converted her from an exporter to an importer of food. The industrial interests experienced no serious opposition to the policy of relaxing the barrier of import duties on manufactures. But when they sought to secure cheaper materials and food by abolishing the agricultural duties, they met

with a stout resistance from the landed interests. The victory of the Anti-Corn-Law-League in the forties was the final triumph of the industrial over the agricultural interests. Free trade was now an accomplished fact.

For a short time the free trade movement made some headway in other European countries, although in several it was subordinate to the wider scheme of removing the remnants of mediæval shackles on internal trade and industry in general. With the revival of the national sentiment, however, first in Germany and Italy and then elsewhere, the last quarter of the nineteenth century witnessed not only a return to, but an intensification of, protection. Finally, as the younger industrial nations are attaining their maturity, Great Britain is commencing to lose her proud position of complete industrial domination, and we accordingly find since the beginning of the twentieth century in the classic home of free trade itself a sharply defined movement for a return to protection.

In the United States the system of protection on a national scale began with the threatened dangers to the industries that had been called into existence by the war of 1812. From that day to this, the protective policy has been followed, interrupted only for the few decades during which the non-industrial South was in the political saddle. With the downfall of slavery there began an era of far more stringent protection which has continued with slight oscillations to the present.

The chief dates in the tariff history of the United States are as follows: 1789, first tariff with a few small protective duties, and a general level of five per cent on the non-protected commodities; 1816, first general protective tariff, with rates of thirty per cent and over on certain textiles; 1824, moderate increases; 1828, the "Tariff of Abominations," with higher rates and duties on raw materials; 1833-1841, the Compromise Tariff, with gradual reductions; 1842, slight changes, but a comparatively low level; 1846, the Free Trade Tariff, with *ad valorem* revenue duties; 1857, a still lower revenue tariff; 1861, 1862 and 1864, War Tariffs, with incidental pro-

tection; 1871, ten per cent reduction; 1875, restoration to the old level; 1883, slight changes; 1890, McKinley Tariff, with higher rates; 1894, Wilson Tariff, with reduced rates; 1897, Dingley Tariff, now in force, with higher rates.

Free trade, therefore, as a world policy is far from being assured. In fact the tendency of recent years is away from, rather than in the direction of, the more liberal movement. It is accordingly necessary to consider the arguments somewhat more closely.

203. The Argument for Protection.

The reasons that have been usually advanced in favor of protection may be reduced to five heads.

(1) The "balance of trade" argument claims that it is necessary to restrict imports in order to secure a surplus of exports and thus to increase the wealth of the country by augmenting the stock of the precious metals brought in through this favorable balance of trade. The fallacy of this old Mercantilist contention is obvious. (*a*) In the first place, exports, as we have seen, must in the long run pay for imports, and it is impossible to increase the surplus of exports simply by diminishing imports. (*b*) Secondly, coin is not imported when exports exceed imports, but when credits exceed liabilities. (*c*) Thirdly, wealth does not consist of money, but of money's worth, and after a certain point has been reached the importation of coin defeats its own object. So defective indeed is this argument that it is no longer advanced by serious students.

(2) The "home market" argument played a great rôle in the earlier political controversies of the United States and in a slightly modified shape formed the basis of Carey's defence of protection. It is founded on the belief that protection is beneficial to agriculture as well as to industry, because the resulting increase of population and wealth will afford a larger market for the food and raw material of the immediate neighborhood. Moreover, the existence of industrial centres will enable the

farmers to devote attention to the more perishable products to which transportation to a distance would be injurious or fatal, and will thus lead to more intensive and diversified farming. Finally, the development of the home market, it is said, will obviate the costly expense of transportation to distant countries and will thus increase the wealth of society in general. This argument has now been weakened, partly because the revolution in the methods of transportation has materially lessened the importance of distance as a factor in cost, partly because the agricultural and mineral output of the United States has so vastly transcended the limits of domestic consumption that the prosperity of large sections depends upon securing an outlet for the surplus. It is the foreign market, not the home market, which is beginning to loom large in the imagination of the farmer.

(3) More important of recent years is the "wages" argument. In the United States this takes the form of ascribing to the protective system the chief efficacy in maintaining high wages. It declares that unless the tariff rates are elevated enough at least to compensate for the difference between the domestic and the foreign standard of wages, the former will drop to the level of the latter. To this the free trader is accustomed to rejoin as follows: (*a*) The argument as advanced by the manufacturers is insincere, because they are interested not in high wages but in large profits. (*b*) There must be a gross fallacy in the argument, because it assumes precisely the opposite form in countries where wages are low. Germany demands protection against England and Russia against Germany, on the ground that their low-priced laborers need to be protected against their more skilful and higher class competitors. In some countries protection is demanded because wages are high; in other countries, because wages are low. If the Russian argument is good, the American argument must be bad, and *vice versa*.

From the point of view of economic principle the following considerations may be advanced. In the first place, we must

not forget the distinction between high wages and high cost. Other things being equal, higher wages indeed connote higher cost ; but, as we learned above (§ 125), there may be an economy in high wages. If high wages are an evidence of high productive efficiency and go hand in hand with improved machinery or superior natural advantages, high wages may mean low cost. It is precisely in those occupations where wages are highest in comparison with abroad, as in the production of boots, bicycles, cottons and wheat, that America is able to export successfully, showing that in these occupations at least high wages are no obstacle to cheap production. While, however, this consideration undeniably impairs the general argument, it does not successfully meet the point that there are other industries which would not be able to withstand foreign competition at home if the present wage schedule were maintained concurrently with a withdrawal of protection. On the other hand, this proves only that these particular industries would not exist ; it does not prove that there would be any reduction in the rate of wages in the other industries which would continue or which might be newly started. Whether wages would fall would, so far as this point is concerned, depend upon the possibility of profitably employing in the old and permanent as well as in the newly started occupations the capital and labor hitherto utilized in the now abandoned industries. To the extent that this might not be possible there would indeed be a tendency for wages to fall, because of the diminished productivity of labor. It is clearly inadmissible, however, to argue that this must necessarily be the case.

This leads to the consideration that the direct influence of protection on wages has been exaggerated. The rate of wages depends, as we know (§ 175), upon the location of the margin of productivity. Where natural resources are abundant, wages will be high with or without protection. The difference between American and European wages was no less striking before the policy of protection was inaugurated in the United States than it is at present. In point of fact, protection was then

demanded on the ground that American wages were high, and no one thought of ascribing the existing high wages to a non-existing protection. In the same way, wages in England have exceeded those in Germany alike during the periods of protection and free trade. Moreover, a large part of industry in every country, as the railways, the building trades and the like, is necessarily local and not exposed to foreign competition. Wages in these occupations are hence not directly affected by any policy of foreign trade. It is only to the extent that protection has an influence in relocating the margin of the productivity of labor in general by affecting the accumulation of capital and the efficiency of labor that it can exert any influence on wages. But this can be accomplished only if the protected industries actually involve the most profitable utilization of labor and capital. The wages argument in this form, however, differs considerably from the common and crude formulation, and in reality fuses into the arguments to be mentioned below. In its crude form the wages argument is not convincing. Protection explains the high wages in America as little as the low wages in Russia. Low wages are found under protection ; high wages under free trade.

(4) The "infant industry" argument is the one which for a long time enjoyed the principal reputation, especially because Mill in his general defence of free trade made in this case an important concession. Although in its theoretic formulation usually ascribed to Friedrich List, it is found substantially in Alexander Hamilton's celebrated Report on Manufactures in the last decade of the eighteenth century, and more fully in the work of Daniel Raymond with which List had become acquainted during his sojourn in America. The theory asserts that just as children need the fostering care of their parents during the period of infancy, so the feeble and newly started industries need to be carefully protected during their years of weakness. It is conceded that this involves an expense, but it is claimed that it must not be considered an economic loss any more than the expense of raising a family is in the true sense a loss ; for

both will more than pay for themselves when they reach maturity. In the case of industries this result will be brought about by the competition between the domestic enterprises, which will ultimately reduce the prices of the commodities to a point lower than that of the foreign wares with the cost of transportation added.

List formulated the theory a little differently. According to him production involves not only the turning out of definite commodities, but the creation at present of the possibility of turning out more commodities hereafter. The real economic function of society is not simply to produce goods but to produce productive forces. Through protection, government achieves this educational end and thus trains the nation to industrial efficiency. National strength and power are the keynote of List's programme, just as national industrial independence was the objective of Hamilton and Raymond. List's work, *The National System of Political Economy*, bears the motto, *Et la patrie et l'humanité*, — "my country as well as the world." The policy of government must therefore change with economic conditions. In the purely agricultural stage when a country, like the United States in the eighteenth century, is not yet ripe for industrial advance, protection would be folly ; in the fully developed industrial stage, as in England during the nineteenth century, protection would be equally inane ; but in the transition stage, as in the United States and Germany at present, protection is as necessary as it will ultimately be profitable.

It will be recognized that List's argument differs from that of Carey and the home market theorists in two respects : it does not involve agricultural protection and it is confessedly temporary in character. With the lapse of every decade and the growth of the infant industries into lusty manhood the argument becomes continually weaker, and protection becomes less defensible as a permanent policy. This has led to the final and most recent argument.

(5) The "variegated production" argument, as it might be

called, accepts the one point in the Hamilton-List theory, but discards the other. It emphasizes the idea of national industrial independence, but maintains that the chief desideratum is a well-rounded economic development, with a due consideration for all the various national interests. In a country like Germany, for instance, where the foreign competition of virgin lands would mean the ruin of domestic agriculture, the increased cost of food and raw material, it is claimed, would be a cheap price to pay for the preservation of a healthy and prosperous farming class. On the other hand, a variegated industry is undoubtedly a sign of progress, and to the extent that it denotes a more efficient utilization of labor and capital and a help to enterprise, it will result in higher wages as well as greater profits, a better standard of life for the workman and a more prosperous condition for the manufacturer. Even if domestic prices are higher than those of foreign goods, the loss to the individuals as consumers is more than offset by the gain that accrues to them as producers and as participants in the general prosperity. Thus protection is demanded as a permanent policy.

204. The Argument for Free Trade.

To these arguments the free traders make rejoinders in detail, all of them based on an affirmative position which, as elaborated by Adam Smith and the Physiocrats, is simplicity itself. International trade is like internal trade : the freer it is, the greater are the advantages to both parties. The idea that what one man or one country gains in trade the other loses is a fallacy scarcely less baleful than the idea that any one can get rich by impoverishing his customers. For in foreign trade the other country is not so much a rival as a customer ; if by restricting imports we exclude their wares, by diminishing exports we necessarily prevent them from buying our wares. By allowing trade to be absolutely unfettered, every one is able to buy in the cheapest and to sell in the dearest market, and the gains of all will be at a maximum. Every

nation will thus be in a position to develop its natural advantages to the utmost, and the world's wealth will be enhanced because of the distribution of productive energies in the most economical fashion. Just as free trade among the separate commonwealths of the United States results in the most efficient utilization of economic forces, so free trade among the nations of the world will bring about the greatest development of wealth. Anything that obstructs this free trade is a step backward.

According to this argument, protection is injurious in several ways. (1) It involves an unnecessary tax on the consumer, because it increases prices by the amount of the tariff. Protection is thus a robbery of the many for the benefit of the few. It is class legislation, and for that reason alone reprehensible. (2) It means a maladjustment of economic forces. Like all other government interference, it savors of paternalism or socialism. (3) Protection does not really protect, because it destroys as many industries as it artificially fosters. Well-nigh every commodity is a raw material for some other commodity. A high duty on iron interferes with the iron industry; a high duty on iron products interferes with the machines constructed of such products; a high duty on machines interferes with industries that use the machines. If protective duties were abolished, it is indeed possible that some industries would disappear, but it is more than likely that other industries, now handicapped by high duties on the manufactures which constitute their raw material, would flourish. A tariff, therefore, means a dislocation, rather than a protection, of industry in general. (4) Protection involves political corruption on a gigantic scale. One has but to witness the scenes in and about the committee room when a new tariff is being framed in the United States to realize that there exists no more potent engine of political demoralization. Section is pitted against section, interest against interest, business against business, and the final result is due to log-rolling and a series of "unholy alliances." (5) Protection is responsible for the

persistence of national animosities, while retaliatory tariffs and commercial wars are often a prelude to the actual clash of arms. Free trade means peace and good-will; protection leads logically to international hatred and bloodshed. The one implies the reign of humanity and brotherhood, the other of particularism and enmity. The one spells progress; the other, retrogression.

205. Conclusion.

If now we attempt impartially to weigh these contending arguments, several points at once force themselves upon our attention. In the first place, some of the positions occupied by extremists on both sides are untenable. The protectionists err, as we have seen, in emphasizing the balance of trade argument, the home market argument or the wages argument, at least in its crude form. The free traders err in claiming that protection is simply class legislation or socialism, or that it is responsible for national animosity.

(1) As to class legislation, protection is supported in the United States by factory owners, laborers, and farmers alike. Some sections and some enterprises, indeed, may derive more benefit than others, but that is the inevitable result of almost all legislation. That in certain countries and in special cases indefensible preferences inimical to the common welfare shelter themselves under the ægis of a protective tariff cannot be used as an indictment of the system in general. Everywhere we must distinguish between use and abuse. Where popular government and constitutional safeguards exist, legislation in behalf of a particular class is not likely permanently to endure unless the community identifies the interests of that class with its own. (2) Again, to affirm that protection is paternalism or socialism is simply to call names, and to make the unwarranted assumption that the ideal of government is *laissez faire*. (3) Finally, to assert that protection is the cause of national animosity is clearly to put the cart before the horse.

Abandoning these far from impregnable positions, there still remains an element of weakness in the arguments of both sides. Even the more moderate advocates of protection are apt to overrate its importance. The efficacy of protection, even at the best, is not unlimited. No degree of protection can make cotton growing permanently successful in Maine, or put the silk industry on a stable foundation in the desert of Arizona or the lumber district of Michigan. Protection must work within the limits of general economic advantages. Unless the artificial environment can be created at a comparatively small cost, it is economically not worth creating. But what is done at even a small cost artificially will often come of itself after a time naturally, and sooner or later the permanence of the industry must rest on these natural foundations. Just as the cotton mills which do an export business, and are therefore independent of protection, are now springing up in the South, so various industries are gradually creeping farther West without any protection against the long-established enterprises in the East. Before the foundation of the Australian commonwealth New South Wales and Victoria pursued opposite policies in foreign trade, and yet their industrial development was approximately the same. Even if there had never been any protection in the United States, the time would undoubtedly have come when the mere accumulation of wealth and the growth of population would have superinduced the development of industry.

On the other hand, the free traders fail to make allowance for an important element in the problem. The essence of free trade is cosmopolitanism ; the essence of protection is nationalism. Free trade holds up to our contemplation the ultimate economic ideal, but fails adequately to reckon with actual forces. The universal republic is far in the distance, and the separate nations still have an important function to subserve in developing their own individuality and thus contributing distinctive elements to the common whole. Legitimate competition presupposes, as we have seen (§ 63), a relative equality

of conditions; as long as the growing nations of the world are in a state of economic inequality, we must expect and not entirely disapprove the effort on the part of each to attain equality by hastening its own development. Ultimately, no doubt, patriotism will be as much of an evil as particularism has now become; but in the present stage of human progress patriotism is a virtue. Free traders often overlook the sound kernel in what seems to be the apple of discord.

As long as nations continue to form the economic units it is not competent to argue from internal free trade to international free trade. The cotton mills in the South may injure their competitors in New England, but the nation will look on with equanimity, because it means a surplus production of wealth within the country. When, however, an industry in one country is menaced by the competition of another, it is no solace to the first that the world's wealth is being augmented at the cost of its own. Nations are not yet so unselfish. They calculate that even if protection carries with it certain incidental disadvantages, they stand to gain more than they will lose. Even as an engine of commercial diplomacy a protective tariff is frequently of service.

In the main, then, the conclusion would seem to be that under certain conditions a protective policy is relatively defensible. It may be conceded that in countries the mass of whose exports are of an industrial character protection is unwise. It may be taken for granted that when nations reach a state of comparative economic equality, protection will be unnecessary and even injurious, because if let alone each will then develop its own natural advantages. It cannot be gainsaid that protection sets loose the selfish passions of individuals and classes and that it is responsible for its share of political greed and unsavory legislation. But when the economic resources of a country are not yet fully developed, it may none the less be desirable to accelerate the pace, in the interests of its own immediate national progress, with the idea that the contributions

of fully mature and economically well-rounded nations to the common wealth of the globe will in the long run exceed the gain from an uneven and one-sided evolution.

So far as the United States is concerned it is scarcely open to question that the system of protection has somewhat hastened the industrial development of the country. It has not created this development, which was bound to come sooner or later, and it is responsible for many incidental evils. It has contributed to political demoralization ; it has sheltered under its wing incompetent individuals who would have been eliminated to the common advantage by free competition ; it is maintained in several industries where it is no longer needed ; it has done its share in creating monopoly conditions in other industries ; and it is calculated in the near future to array class against class as the interests of some become more clearly favorable to an unrestricted foreign market which can be secured only by letting down the bars of the tariff. And yet it is difficult to escape the conclusion that protection has been on the whole a wise policy for the United States. Without it, it would probably have taken us somewhat longer to come to our own ; without it the immense amounts of capital invested by foreigners in starting industries on this side of the tariff wall would have been employed at home, to that extent retarding the diversification of American industry and the influences that contribute to the increased efficiency of labor ; without it the United States would not have entered so soon on its rôle as a world power ; without it, in short, the whole tempo of economic progress would have been slower. To those who deplore the feverish haste of modern life, this will serve as an additional objection to protection. To those, however, who desire to face industrial facts as they exist, and who realize that in the intense national rivalry of to-day, to stand still is to retrograde, the efforts of the statesmen who have guided the policy of the United States almost from the beginning will not seem to be such a tissue of errors or such a chain of mistaken aspirations as they are sometimes represented. As the United States

becomes more and more of an industrial nation, seeking an outlet for its manufactures, it is indeed probable that the tariff will be gradually lowered, with advantage to all; but he would be a hasty prophet who would predict any sudden or material change for a considerable time to come.

CHAPTER XXXI.

TRANSPORTATION.

206. References.

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207. Transmission of Intelligence — The Post-Office.

Transportation as an economic factor includes the transmission of intelligence as well as the transportation of persons and commodities. The deeper influence of the modern media of transportation in overcoming the element of distance has been adverted to above (§ 19). The purpose of this chapter is to discuss some of the specific problems connected with actual charges.

The chief media of the geographical transmission of intelligence are the post-office, the telegraph and the telephone.

Postal service in classic antiquity was almost exclusively for governmental purposes. In the middle ages it was largely a private enterprise carried on to serve the interests of the merchants, as in the Hanseatic towns, or in the case of the students living far from home at the Universities. It was not until the seventeenth century that a regular postal service was inaugurated in Europe. Mail coaches were first used by Pitt in 1784, and the modern postal system was introduced by Rowland Hill's reform in 1840. The four points of the reform were uniformity of rate, penny postage, prepayment and the use of stamps. Up to that time adhesive stamps were virtually unknown, prepayment of postage was deemed an insult, and rates were graduated according to distance in conformity with the so-called zone system. In England the charge for a single thin sheet varied from 4d. for 15 miles to 12d. for 300 miles. A letter weighing two ounces from London to Cork cost 9s. 11d. — about eighty times the present rate. In America up to 1845 the rates were analogous — 6 cents to 25 cents per single sheet for distances from 30 to 400 miles. Hill concluded that the chief cost was ascribable to the handling of the mails at both ends, and the suggestion of uniformity carried the other schemes of improvement with it. By 1857 the reform was accomplished in the United States, and in 1874 the international post was inaugurated. The use of universal postage stamps has, however, not yet been found practicable, owing to the diversity in the currency systems.

The post-office business is not confined to (1) the transportation of letters. In most countries it includes: (2) the parcels post, (3) the passenger post, (4) postal money orders, (5) postal collection of bills, (6) postal savings banks, (7) postal telegraph and (8) postal telephone. In the United States all these additional functions, except the fourth and to a minor extent the second, are in private hands. But notwithstanding the restricted scope of the American post, the factors of national wealth, popular intelligence and immense distances have combined to make the postal transactions of the United

States by far the most important, not only absolutely, but relatively to population. The expenditures for 1904 were over \$150,000,000, involving a deficit of about \$6,500,000, due partly to the growing demands for rural free delivery, and partly to the misuse by book publishers of the low rates on periodicals.

Postal charges are usually based upon the principle of joint cost (§ 107). This involves the principle of particular value of service, as modified by general cost of service. Letters pay more than merchandise, merchandise more than books, books more than newspapers. Were the rates primarily based on particular cost, they would be inverted, for it obviously costs more to transport a newspaper than a light letter. The higher letter rate is imposed on the principle that inasmuch as the entire cost of the postal service must somehow be met, the letters can better afford to make a substantial contribution to this end than the newspapers. The receipt of the letter is worth more to the average correspondent than the receipt of the newspaper to the average subscriber. It is the value, not the cost, of the service, which is the controlling factor. Cost of service enters only as a minor ingredient, for letter rates increase with weight, speed and risk, in case of excess postage, special delivery and registered mails.

The same holds good in a modified way of telegraph and telephone charges. Newspaper telegraph rates are lower than ordinary rates; business telephone rates lower than residential rates. In only one important respect is there a difference. The telegraph and telephone charges in America are still calculated according to the zone system, long since abandoned in the post-office. This is due in part to the fact that the distance element in cost is greater in the telegraph and telephone than in the post, but chiefly to the fact that the former are still conducted by private enterprises on the principle of maximum profits rather than of the greatest social utility. The question of government ownership will be discussed later (§ 223).

208. Railway Development.

Of the modern media of transportation the railway is the one that presents the most difficulties. Canals, which developed in England and America at the end of the eighteenth and the beginning of the nineteenth century, have lost their original function as the chief artificial medium of transportation, and are now of importance only in exceptional cases like the Erie and the Panama canals; or where, as in some of the European countries, they are links between rivers or between the rivers and the sea.

When Solomon de Cause first advanced the idea of employing steam as a propelling power in 1615, he was shut up in the mad-house as a hopeless maniac. Two centuries later, in 1812, when Colonel Stevens of Hoboken proposed to build a steam railway at far less cost than the projected Erie Canal, he was regarded as absurdly visionary and somewhat demented. And yet to-day, almost within the short space of a human life, we have a vast network of over half a million miles of iron roads encircling the civilized world, considerably over one-third of which are found in the United States. The table on the opposite page shows the railroad mileage of the world by countries in 1903.

In the United States the railway mileage was 23 in 1830; 2,818 in 1840; 9,021 in 1850; 30,626 in 1860 and 52,922 in 1870. The tables on pages 522 and 523 will give the salient details of the railways of the United States since 1875.

In Europe the railways were built to accommodate existing traffic; in America they were constructed, for the most part, to create new traffic. In Europe the railway was the result of civilization, in America an outpost or harbinger of civilization,—a difference which has led to three important results:

(1) The cost of railways in America is far lower than in Europe. In a new country the right of way is inexpensive, the terminals acquire value largely as a result of the railway itself.

Moreover the exigencies of business do not necessitate the solidity of construction that is required in older communities.

EUROPE.		NORTH AMERICA.	
Germany	33,490	United States	207,604
Russia (in Europe)	32,146	Canada	18,868
France	24,249	Mexico	9,244
Great Britain and Ireland	22,152	SOUTH AMERICA.	
Italy	9,960	Argentine	11,000
Spain	8,380	Brazil	9,370
Sweden	7,588	Chili	2,800
ASIA.		SUMMARY.	
Russia (in Asia) .	37,287	North America	237,659
India	25,931	Europe	179,562
Japan	4,116	Asia	75,491
China	2,800	South America	29,122
		Australasia	16,972
		Africa	11,984
		Total	550,710

These conditions are reflected in the following table of average cost of railways per mile :

England	\$190,000-\$210,000
France	150,000- 190,000
Belgium	110,000- 125,000
Germany	100,000- 105,000
United States	60,000- 65,000

(2) The desire of the new communities to secure additional facilities led to the adoption in the United States of the competitive method in building railways, whereas in Europe it was recognized from the outset, or soon realized, that one railway between two points could in many cases perform as efficient service as two or three. What occurred at an early date in Europe is in process of accomplishment in the United States. The American railways are being rapidly consolidated into large groups, each of them serving a particular section. In

LENGTH OF RAILWAY LINES AND COST OF CONSTRUCTION

Years.	Length of Lines. (Miles.)	Cost of Construction.			Total Liabilities, except Current Accounts and Sinking Funds.	Total Cost of Construction per Mile.
		Capital Stock.	Funded Debt.	Floating Debt.		
1875	74,096	\$2,207,564,835	\$2,268,066,845	• • • • •	a 4,415,631,630	\$59,593
1876	76,368	2,248,223,560	2,250,593,560	• • • • •	a 4,418,591,935	58,179
1877	79,298	2,313,278,598	2,355,318,650	183,288,556	a 4,506,294,022	60,678
1878	80,832	2,292,257,877	2,297,790,916	183,288,556	4,772,297,349	59,040
1879	84,393	2,395,947,293	2,319,480,172	156,881,052	4,872,017,517	57,730
1880	92,147	2,708,973,375	2,530,874,943	162,489,339	5,402,038,157	58,644
1881	103,530	3,177,375,179	2,878,443,606	222,716,267	6,278,595,052	60,645
1882	114,428	3,478,014,224	3,214,084,323	267,650,730	6,960,639,277	60,830
1883	120,519	3,675,793,383	3,479,411,194	267,834,906	7,142,309,003	61,592
1884	125,119	3,728,055,041	3,647,312,772	244,018,597	7,017,96,410	60,886
1885	127,680	3,778,060,737	3,740,255,066	256,989,391	7,775,83,194	60,897
1886	133,505	3,956,577,493	3,853,738,330	279,143,013	8,089,268,441	60,504
1887	147,953	4,140,058,214	4,155,628,116	292,455,121	8,595,041,451	58,093
1888	154,223	4,392,287,224	4,185,471,523	304,155,858	9,281,014,605	60,185
1889	159,934	4,449,103,600	4,178,473,271	345,661,983	9,571,019,854	59,881
1890	163,359	4,599,471,500	5,055,225,025	375,228,630	10,020,925,215	61,343
1891	167,846	4,751,750,498	5,180,227,024	345,051,807	10,277,029,329	61,229
1892	171,805	4,883,119,073	5,406,935,004	285,212,887	10,555,261,964	61,490
1893	175,442	5,021,576,551	5,510,325,528	409,990,043	10,941,711,122	62,367
1894	178,954	5,027,604,717	5,605,775,764	382,927,834	11,016,368,315	61,871
1895	179,824	5,134,373,599	5,648,659,436	418,535,623	11,248,59,658	62,554
1896	181,394	5,323,187,619	5,466,856,798	344,499,969	11,179,54,386	61,631
1897	183,547	5,602,64,449	5,534,432,492	386,697,075	11,510,16,046	62,753
1898	184,804	5,811,522,855	5,638,303,594	368,121,584	11,585,09,036	62,658
1899	187,781	5,742,181,181	5,644,858,027	305,777,858	11,692,8,766	62,265
1900	192,162	5,864,346,250	5,755,592,754	328,933,335	11,891,092,339	61,884
1901	195,887	6,038,796,249	6,038,690,741	312,225,536	12,326,491,526	62,986
1902	197,645	6,028,190,596	6,465,349,839	310,345,867	12,853,97,308	64,371
1903	206,406	6,355,207,335	6,722,216,517	448,091,448	13,525,633,100	65,377

^a Total stocks and bonds per mile.^b Total capital stock and funded debt.

RAILWAY TRAFFIC EARNINGS.

Years.	Miles Operated.	GROSS TRAFFIC EARNINGS.			Percentage of Gross Traffic Earnings to Total Liabilities.	Net Traffic Earnings.
		From Passengers.	From Freight.	Miscellaneous.		
1875	71,759	\$139,105,271	\$363,960,334	a	\$503,065,505	\$185,506,438
1876	73,508	136,120,583	361,137,376	a	497,257,959	186,452,732
1877	74,112	130,059,322	342,859,222	a	472,909,272	170,907,067
1878	78,960	124,637,290	305,466,061	a	490,103,351	157,575,167
1879	79,000	142,136,191	386,676,108	a	525,640,577	10,3
1880	82,146	147,653,903	367,748,948	a	613,733,610	216,544,999
1881	92,971	173,356,642	551,948,477	a	701,780,932	255,557,535
1882	104,938	196,213,220	566,367,247	\$61,650,932	764,231,399	272,406,797
1883	110,381	206,837,256	549,782,095	60,782,655	817,736,576	278,000,565
1884	115,671	206,799,701	506,921,375	56,952,816	770,668,892	268,060,517
1885	123,280	200,883,911	519,690,992	447,735,616	765,493,369	266,615,933
1886	125,144	211,929,357	520,359,054	59,182,385	823,182,385	267,372,539
1887	136,982	240,542,876	636,676,223	54,176,055	931,173,488	331,174,183
1888	145,333	251,356,167	659,300,733	60,065,118	956,519,764	297,306,541
1889	153,885	259,439,231	66,942,231	66,942,231	991,933,531	317,866,883
1890	157,976	272,320,961	724,821,733	71,692,645	1,086,919,715	342,971,266
1891	164,262	290,799,696	754,185,910	86,549,299	1,125,518,194	350,748,483
1892	170,607	293,557,476	808,924,500	1,169,036,840	11,1	352,817,495
1893	173,607	310,442,870	808,494,608	88,168,488	1,207,106,026	358,648,018
1894	176,121	275,353,190	700,477,409	91,113,759	1,066,943,358	317,757,399
1895	179,154	260,929,741	743,784,451	87,68,245	1,092,395,437	323,196,454
1896	180,891	265,313,258	720,424,013	89,394,754	1,125,932,025	332,766,979
1897	181,874	253,557,936	780,351,939	98,956,754	1,138,866,026	342,792,010
1898	184,533	272,580,591	868,924,526	108,044,607	1,249,558,724	389,666,474
1899	186,590	297,155,912	922,436,314	116,100,353	1,336,096,379	447,741,014
1900	191,862	331,402,816	1,052,835,811	117,456,751	1,501,095,378	483,247,536
1901	194,975	360,702,686	1,126,267,652	125,478,488	1,612,448,826	520,294,727
1902	197,887	396,513,412	1,197,121,452	127,080,956	1,720,8,4900	560,926,277
1903	205,237	429,705,287	1,344,150,719	135,001,820	1,908,857,826	592,508,512

a Included in foregoing.

b Total stocks and bonds only reported.

c Less taxes.

the table on page 525 will be found the details of this process as it had developed in 1905, with the existence of five groups each of about 20,000 to 30,000 miles in length and with several others in process of formation.

(3) In the United States the existence of keen competition, of rapid improvements in facilities, and above all of the growth of the long-distance traffic have conspired to bring about a remarkable progressive reduction in freight rates during the past thirty years. The facts are represented on the chart opposite page 524. As we have learned, moreover, from the table on page 523, the earnings have nevertheless increased faster than the mileage. There is now, however, a probability that this reduction has well-nigh reached its limit, and in fact since 1900 there has been a slight advance.

209. Nature of Railway Business.

The railway business possesses three distinctive characteristics: it is more than a mere private undertaking; it tends inevitably to become a monopoly; and, as in all large enterprises where the proportion of fixed capital is relatively great, there is a somewhat peculiar relation of constant to variable expenses.

(1) When investors put their money into a railway, they are in a sense its owners. But a railway is not like a shoe factory. The state grants to a railway corporation some of its own sovereign powers, as the right of expropriation of private property; it regards the railway as its agent, and in return insists upon a large measure of responsibility to the public. Even the private railway, therefore, is a quasi-public institution.

Railway rates and fares may hence be regarded from two different standpoints. In so far as a railway is a business corporation, it is a private matter: it may construct its tariff in accordance with general business principles; it will endeavor to subserve primarily the interests of its owners. It will strive for the greatest possible profits; and this course is legitimate and praiseworthy. But in so far as the railway forms the public highway, it is a public matter: the objective point now

	Miles.		Miles.
VANDERBILT GROUP :		GOULD GROUP — <i>continued.</i>	
New York Central Lines	11,931	St. Louis and Southwestern	1,309
Chicago and Northwestern	7,411	International and Great Northern	1,159
MORGAN GROUP :		Denver and Rio Grande	2,460
Southern Railway	7,197	Missouri, Kansas and Texas	3,043
Mobile and Ohio	912	Wabash	2,516
Queen and Crescent	1,259	Rio Grande Western	645
Central of Georgia	1,936		
Georgia Southern and Florida	392	HILL GROUP :	
Philadelphia and Reading ¹	2,146	Great Northern	5,951
Lehigh Valley	1,393	Northern Pacific	6,036
Erie	2,315	Chicago, Burlington and Quincy	8,378
Central of New Jersey	641		
Atlantic Coast Line (in- cluding Plant System)	4,229	ROCK ISLAND SYSTEM :	
Nashville, Chattanooga and St. Louis	1,201	Rock Island	7,259
Georgia Railroad	307	St. Louis and San Francisco	5,107
Western of Alabama	132		
Macon and Birmingham	97	INDEPENDENT SYSTEMS :	
Atlanta and West Point	87	Chicago, Milwaukee and St. Paul	7,130
HARRIMAN GROUP :		Atchison, Topeka and Santa Fe	8,300
Illinois Central	5,550	Cincinnati, Hamilton and Dayton	4,043
Union Pacific System (in- cluding Oregon R. R. and Navigation Co. and Oregon Short Line)	5,594	Seaboard Air Line	2,811
Southern Pacific	9,261	Colorado Southern	1,911
Chicago and Alton	973	Chicago and Great Western	1,474
PENNSYLVANIA GROUP :		SUMMARY:	
Pennsylvania System	10,605	Vanderbilt Group	19,342
Baltimore and Ohio System	4,442	Morgan Group	30,600
Norfolk and Western	1,769	Harriman Group	21,378
Chesapeake and Ohio ¹	1,671	Pennsylvania Group	20,076
Buffalo, Rochester and Pitts- burg	553	Gould Group	19,192
Western New York and Pennsylvania	645	Hill Group	20,365
Long Island	391	Rock Island System	12,366
GOULD GROUP :		Independent Systems	24,729
Missouri Pacific	6,234	Total	169,048
Texas and Pacific	1,826	Small roads	49,000
Aggregate mileage about			218,000

¹ Some of the stock of the Chesapeake and Ohio and of the Reading is owned by the New York Central.

is the general welfare ; it aims not at the greatest possible profits, but at the greatest possible benefits ; it looks not at the interests of its owners, but at the interests of the public. The one point of view is individual, the other is social.' The modern railway corporation shares both these characteristics : its nature is hybrid. To subordinate the public to the private element is plainly inadmissible. Entirely to engulf the private in the public element is equally unfair, so long as the railway is not owned by the state. In the United States two principles, at all events, have been firmly established during the last generation. The one is that the railway is more than a mere private business ; the other is that the capital invested by private individuals in railway enterprises does not lose its claim to a just remuneration or to equal protection before the law because of the fact that the railway is a quasi-public institution.¹

(2) The railway tends sooner or later to become a monopoly. So far as the local traffic is concerned, this is true from the outset. The chief consideration here is the possibility of increasing production without proportionate increase of plant or capital. The traffic on a railroad may be doubled without the necessity of duplicating roadbed, track, terminals and general expenses. Several lines paralleling each other at every point would not benefit the public and would certainly ruin each other. But even in long-distance traffic much the same is true. The theory of the beneficence of competition depends on the postulate of the transferability of capital. In case of failure the unsuccessful competitor deserts the enterprise, but the railway, once started, has come to stay ; it may change hands, but it will not, and in many states it cannot, be abandoned. A bankrupt individual may be disregarded as a competitor ; a bankrupt railway is a more dangerous competitor than before, because the receiver need not earn anything to

¹ These leading cases were the Granger Cases (*Munn v. Illinois*), 94 U. S. 113 (1876), and the Nebraska Rate Cases (*Smith v. Ames*), 169 U. S. 466 (1898).

pay interest or dividends. There is hence every inducement for the railways to prevent competition ; and the attempts will vary from more or less loose agreements to complete consolidation. As Gladstone said at the time of the English discussion in 1844 : competition between railways is like a lovers' quarrel : *breves inimicitiae, amicitiae sempiternae*. Moreover, this tendency cannot be permanently arrested by legislation. We may prohibit railway combinations, but we cannot prevent them. If we make them illegal, we simply make them secret, or cause them to change their form.

The public again profits in some respects no less than the railways. The curse of free building of American railways has been the system of parallel and often needless lines. An additional road between two terminal points frequently represents so much wasted capital, and the necessity of earning profits on this swollen capital aggravates the burden on the public. Competition between railways is supposed to be responsible for the facilities and low charges of American railways : in point of fact its influence has been much exaggerated. The competition, while it lasts, is of a desperate character, and each line strains itself to the utmost to secure the business that is often sufficient only for one. Charges may indeed be lowered temporarily, but the strenuous effort to secure traffic gives birth to the very worst abuses of railway management, — secret personal discriminations and immoderate local discriminations. The changes are violent, the conditions unstable. Reduction of rates is sometimes carried to such a point that not even operating expenses are met. The railway wars, which are the logical and extreme manifestation of railway competition, exhaust the companies and afford but a dubious relief to the public. Lowness of charge is outweighed by instability of charge. The reduction itself is, moreover, of an ephemeral character. Continuance of low rates means universal railway bankruptcy ; escape from ruin is possible only through combination. If competition be beneficial to the public, it is a temporary benefit ; if railway wars, on the other hand, throw

trade into confusion and engender the most aggravated abuses, the cessation of competition is a boon to the public. As was pointed out in § 63, competition in ordinary business is the "life of trade," but competition in railways might be called the death of trade, or at all events the death of honest and impartial treatment of traders.

(3) Railway outlays are divided into fixed charges or interest, and operating expenses. While the proportion which fixed charges bear to total expenses varies with each line, it may be said roughly that it is usually from forty to fifty per cent. In other words, well-nigh half the expenses are constant or invariable. They do not change with the amount of business transacted.

The operating expenses are divided into (*a*) maintenance of way and stations, (*b*) maintenance of equipment, (*c*) conducting of transportation and (*d*) general expenses, such as office, law and insurance expenses. Of these (*c*) and, to a smaller extent, (*b*) fluctuate almost in proportion to business transacted; but (*a*) and still more (*d*) will change only very slightly with the traffic. The proportion of each of these four classes to the whole will vary with the widely different characteristics of each line; but it may be safely affirmed that in general about one-half of the operating expenses are constant or invariable.

The total constant expenditures of a railway are thus the fixed charges plus one-half the operating expenses. In other words, a large majority of railway expenses are irrespective of the amount of business. They remain the same, notwithstanding the increase or decrease of the traffic. The effect of this state of things on the determination of actual rates will be seen in § 211.

210. Principle of Railway Charges.

Whether the railway be owned by the state or by a private corporation, there must, up to a certain point at least, be a similarity in the principle of charge. For the interests involved are so enormous, and the particular benefits to the patrons so

separable, that no country has yet proposed to run its railways free or below cost. Some states like Prussia make large profits out of their government railways ; others as in Australia endeavor just to cover the cost ; but none has attempted to make up a railway deficit by taxation.

The principle sometimes advanced as an ideal is that of cost of service. A fair criterion in ordinary commodities is cost of production ; why, it is asked, should it not be applied to railway transportation ?

(1) Obviously, however, this cannot mean the cost of the particular service. In the first place, such cost is impossible of ascertainment. There is a wide disparity in the cost of carriage on the same line according to the changing conditions under which the service is performed. At one time the greater portion of the freight may be carried over the whole line ; at another the local business may outweigh the through traffic, so that the capacity of the rolling stock is not fully utilized. At one time the traffic may move in great part in one direction and the number of "empties" returned may be abnormally large ; at another time there may be far more back-loading and a more even distribution of traffic. At one time the trains may be started with full loads ; at another, they may be half filled. The proportion of paying freight to dead weight, or the amount of the tare, is of considerable importance. So that, even if it were feasible to construct a tariff based on the cost of service of each particular transaction, it would be of no avail unless the amount of freight remained an unalterable quantity.

(2) Secondly, if rates were based on cost of service, most of the work performed by the railways would come to a standstill. It costs immensely more to transport a given value of heavy goods like coal than an equal value of silk. If rates were fixed according to cost of carriage, the expense of conveyance would so vastly exceed the prime cost of the coal as effectually to bar its use except in the immediate neighborhood of the mines. In the same way it costs so much more to bring heat from North Dakota to New York than from Troy to New

York, that unless a lower ton-mile rate was granted on the North Dakota business, there would be no market for it at all in New York. Individual cost of service can hence not possibly be a criterion of railway charges.

(3) If therefore anything is meant by cost, it must be joint cost. As we have seen, however, in our general discussion of value, joint cost refers only to the cost of all the services in the aggregate, and affords no criterion as to the principle governing the separate services. To ascertain this we must revert to an anterior law of value, namely, the law of marginal utility. In other words, the principle of charges is not the cost of the individual service, but the value of the individual service.

The object of a railway is to increase its traffic and to decrease its expenses. This it finds can be best attained by lowering the charges on certain classes of goods, or on the same classes to different localities. But this is equivalent to saying that what influences the manager is not the cost, but the value, of the service. This practice in railway parlance is called "charging what the traffic will bear,"—an unfortunate expression, and liable to much misconception. If we mean by the principle "charging what the traffic is able to bear," it is correct; but if we mean "charging what the traffic can be made to bear," it is incorrect. Charging what the traffic will bear, rightly understood, simply serves as an excuse for reducing rates on low-class traffic because it cannot bear higher rates. The phrase is a bad one, because it may be twisted into meaning that the greatest possible charges on high-class goods are also legitimate. Correctly interpreted, it justifies lower charges on certain kinds of business; incorrectly interpreted, it seems to justify extortionate charges on other kinds of business.

The attempt to make the theory of joint cost the fundamental explanation of railway rates is, moreover, erroneous for another reason. Prices are fixed at the point of cost of production or joint cost, as we know, only when the products are competitive products. There is always a marginal producer

who sells at cost price without any profit. But in monopolies there is no marginal producer, and, as we have seen (§ 110), the relation of price to cost is far more indirect. Price may be continually above cost, the difference being the monopoly profits. Price in such cases is fixed according to the principle of monopoly maximum returns, which is nothing but charging what the consumer can afford to pay. The charges on each monopoly by-product will be put at the highest price consistent with greatest sales or profits, and not necessarily proportionate to cost of production. As we have learned in the last paragraph, however, a railroad is in the long run a monopoly. Railway charges, therefore, are fixed not by any principle of cost, but by the principle of monopoly profits, that is, charging what the traffic will bear.

This also explains the analogy that is frequently drawn between railway charges and taxation, with the idea of ability or capacity to pay. Taxation is compulsory, but payment for a monopoly of a necessity of life (like railroad charges in the present stage of business activity) is in one sense equally compulsory. The principle of charging what the traffic will bear, in any monopoly, has reference to the ability of the patron to pay. The monopolist is indeed not moved by ethical considerations, but the price that he charges depends upon what the purchaser can afford to pay. Justice in taxation requires that a man shall pay in some proportion to what he can afford ; the fixing of monopoly price depends on what he thinks he can afford : at bottom, there is a real analogy between the cases.

Some object to the value of service principle as the explanation of railway rates, because they hold that value means intrinsic utility and grain and coal would then be charged more than silks and spices. This is to revert to the old fallacy that value and utility are identical. The slightest acquaintance with the modern theory of value suffices to dispel this objection. When we say that railway rates are fixed by value of service, we mean that the marginal utility of the service is definitely estimated by the shipper ; that if the rate exceeds

this estimate, the commodity will not be sent; and that a different estimate may be put on each shipment or commodity. The marginal utility of the service fixes the prices of all commodities; but it is only in the case of competitive production that this is equivalent to joint cost. Thus the theory of joint cost, in so far as it is true at all, is a subordinate part of a more general rule; and to the extent that the railroad is a monopoly, the theory becomes less and less true. The dispute will easily be avoided as soon as it is recognized that cost of service or joint cost is simply a variation of value of service, and that the theory of marginal utility (which is nothing but value of service) is the fundamental explanation not only of railroad charges but of all prices.

211. Classification.

Charging according to what the service is worth results in the two fundamental principles of classification and discrimination. Classification is due to the fact that the same service has a varying value when rendered to different commodities. Discrimination (*i. e.* local discrimination) is due to the fact that the same service has a varying value when rendered to different places. Whether the same service has a varying value for the freight of different persons, and may thus give rise to personal discrimination, is a question to be treated by itself.

Value of service influences classification in a double way,—
it puts the same articles into different classes, it puts different articles into different classes. The first method is illustrated by the distinction between freight and express traffic. In the United States the general classification applies only to freight traffic. In the rest of the world, where separate express companies are unknown, the rates are classified according to this distinction, as in England, where they are known as goods and parcels rates. In the same way passenger fares on express trains are often higher than on ordinary trains.

Far more important, however, is the classification of different

articles into different categories. Cost of service indeed influences classification to a minor extent in so far as the articles differ in bulk, shape, risk, direction, or regularity of shipment, or as passengers use a Pullman or a plain coach. Actual rates, however, are mainly influenced not by cost of service, but by what the service is worth. The main point is the development of the traffic. We must keep in mind the distinction drawn in § 209 between the constant and the variable expenses. If the freight or the cheap passenger business, like immigrant traffic, can be secured at rates which will more than cover the variable expenses,—the actual hauling and a proportionate part of the station expenses,—it will pay the road to take this business, because a contribution, however small, is thereby made to fixed expenses. These would have to be met at all events. A small contribution to constant expenses is better than none at all. Yet to apply this low rate to all business would ruin the company.

Classification again benefits the public. The meagre surplus over hauling expenses on the cheap goods contributes, if ever so little, to the fixed expenses, and diminishes to this extent the amount which it is necessary to raise from the remaining traffic. If we had no classification, not only would we not have cheap meat and cheap wheat, but the charges on the dear goods would be higher. It reduces the rates on the cheap goods immensely and the rates on the dear goods moderately. The principle of classification is the first corollary from the distinction between constant and variable expenditures.

To uphold the legitimacy and necessity of classification is, however, quite another thing from attempting to palliate undeniable abuses. Classification plays only a very slight rôle in passenger traffic because, especially in democratic countries, one man is considered as good as another; but the freight classifications, most of which have grown up in a hap-hazard way, are full of inconsistencies. There are two problems in freight classification,—to secure uniformity between different railways and to secure uniformity between shippers.

(1) At the outset every road had its own classification. With the growth of consolidation and agreements classifications applicable to connecting and competing roads were elaborated. In a small country like Italy it has been found possible to construct a uniform tariff for the entire country. In the United States the difficulties arising from the conflicting interests of different sections have been found insuperable. The South demands a specially low rate on cotton, the West on wheat, the Pacific slope on fruit, and so on. There are now four chief classifications,—the official (in the North and East), the Southern, the Western, and the Transcontinental classifications. Cotton piece goods, for instance, are in class one in the Western, in class three in the official, and in class five in the Southern classifications. What the railroads, however, are not able to accomplish by mutual agreement will probably be effected in no distant future by legislation.¹ If this is done, however, the greatest care will have to be taken, when prescribing a national classification, to provide for an adequate number of special or commodity rates outside of the regular classes.

(2) The American classifications, although far superior to those of a few decades ago, are still often lacking in uniformity, in stability and in justice. If the railway is a quasi-public institution, these wide powers of fixing the classes cannot be put in the hands of private individuals or corporations as sole arbiters. To imply with many of our eloquent railway officials that there is an identity of interests between the railway and the shippers is unfortunately not borne out by experience. To demand, on the other hand, a rigid law prescribing all details would impute to our legislators a knowledge which they cannot possess. To cure the abuses of classification by Congress designating administrative agents who, under the spoils system, shall fix the classification, would be a jump from the frying

¹ A history of the attempts to secure a national classification is found in *Interstate Commerce Commission Reports*, second, fourth, and eleventh reports.

into the fire. An escape from the dilemma seems to be outlined in the principle of advisory boards or consultative councils, which have been established in Germany, Italy and Japan. These councils represent the commercial interests, and the classification finally adopted is the result of a conference, and often a compromise, between the shippers and the railways.

212. Personal Discrimination.

As opposed to classification a discrimination may be defined as an inequality in the charge for hauling a like quantity of similar articles or individuals for an equal distance in the same manner. All discrimination is either personal or local.

While differences in rates based on classification are in a sense legitimate, it is impossible to find any principle on which to base personal discriminations. Personal discriminations in passenger fares take the form of free passes; personal discriminations in freight rates occur in a multiplicity of ways. They are beyond doubt the most flagitious abuses of arbitrary railway management.

Allowance for quantity or making a lower charge for larger shipments is indeed, within certain limits, defensible. It is then, however, really a matter of classification, and may be upheld in the same way as the distinction between slow freight and express business. The difficulty, however, is to select the unit above which the rates shall be the same to all. Shall it be the pound, hundredweight, ton, car load, cargo lot, or train load? Usually the car load is taken as the dividing line, and as such does not excite much dissatisfaction, although even this may sometimes work injustice to the small shipper and cause indefensible preferences.

But if this comparatively unimportant difference be only partially justifiable, the vastly greater discriminations which cannot even claim cost of service as an ostensible reason are indefensible on any theory whatever. To build up one man's business at the expense of another's can never be acknowledged a legitimate function of common carriers. The railroad ad-

vocates sometimes assert that a business firm makes wholesale rates less than retail rates and gives special figures to different customers. Why is not the same principle applicable, they ask, to the railroad business? They utterly fail to perceive that the railroad is not simply a private business, but a public trust; that a merchant is not bound to treat his customers equally, but that a railroad exercises public functions, is invested with public rights and therefore has public duties. The wholesale principle or allowance for quantity, when carried to this extreme, becomes utterly untenable.

Personal discriminations, then, cannot be upheld on any theory. They must be stopped at all hazards. But how? Whatever be the affirmative answer, we are now prepared at all events to exclude certain negative replies. To rely on free competition as a remedy is absurd. Personal discriminations are most glaring when competition is most active. Cut rates and rebates are never so common as during railway wars. The great mass of personal discriminations are due not to the volition of the railway managers, but to the stress of competition and the desire to attract business. The Interstate Commerce Law, which in one section attempts to restrain competition by prohibiting railway pools and in another section forbids personal discrimination, is endeavoring to secure two diametrically opposite ends. If we strengthen competition, we inevitably increase personal discrimination.

213. Local Discrimination.

Local discrimination may arise in two ways. (1) The road may desire to extend its traffic in commodities coming from a distance. If they are to be carried at all, they must be transported at less than regular rates. Hence arises the necessity of a distinction between local and through traffic. Goods coming from a distance must be treated in the same manner as cheap goods. Local discrimination is like classification. The distant freight is the cheap freight, the near freight is the dear freight. Local discrimination of this kind is in principle

legitimate. The long-distance traffic, by making a contribution to constant expenses, reduces the local rate as well. It is the immense long-distance traffic in the United States which has enabled the American railways to reduce their charges, local as well as through, far below the European level. The abolition of local discriminations of this kind would level up, not level down.

(2) Local discriminations may arise from competition at the junction points. The competition may be due to cheaper water transportation, to a foreign railway or to a better equipped or shorter domestic railway. A lower rate to the competitive centre is the sole condition of the retention of the competitive traffic.

It is sometimes stated that local discriminations are in principle reprehensible because they remove geographical advantages ; and it is claimed that the true principle is that of the equal mileage rate. This argument, however, is not convincing. There is no such thing as an inviolable geographical advantage. There are no vested rights in situation. One town may be connected with the coast only by a turnpike ; another farther distant may have the good fortune to see a railway built through its limits. Has the former any cause to complain because it is robbed of the benefits of its hitherto advantageous situation ? The object of all improved means of communication is, in fact, to annihilate distance, to minimize differences in situation. Maintenance of original geographical advantages would render impossible all but local business in the vast mass of commodities ; it would again turn our Western fields into barren wastes. Differential rates widen the field of supply ; they increase the specialization of wants and create the possibility of satisfying these wants, so characteristic of modern society. Opposition to local discriminations arises from viewing solely the interests of the producer ; rational economics leads us to consider also the consumer. Opposition to differential rates is based on the supposed welfare of a particular class or section of producers ; a wise national economy will ponder

over the interests of the whole community, irrespective of sectional jealousies. If local discriminations are so arranged that distant producers are enabled to compete with local producers, the latter may indeed see their profits curtailed, but the former will see their profits increased, and the consuming public as a whole will evidently gain.

This does not, however, justify all differential rates. The abuses have often been outrageous, the methods undeserving of palliation. Local interests have been disregarded, and the discriminations so conducted as to ruin whole businesses or towns in order to build up others. It is not necessary to ascribe illicit motives to the railway managers. They have often been forced into unjust discrimination by the stress of competition and the instinct of self-preservation. But railway officials commit a great mistake in calling all local discriminations just, because they are the effect of competition, precisely as the demagogues err in opposing undeniably valid discriminations and at the same time upholding competition. Competition is made to cover a multitude of sins. Railway profits and public interests do not always go hand in hand. The possible diversity of interests renders some forms of governmental supervision imperative.

It is indeed true that, in the main, rates should increase with distance or mileage. Some extremists propose to apply to railways the postal principle of making a uniform charge irrespective of distance. This, however, completely overlooks the fact that in the post the chief item of cost is the handling at each end and that the expense of transportation itself is an insignificant fraction of the whole; while in the railway, on the other hand, a far greater part of the cost, especially in longer distances, is the mere hauling expense. To disregard distance would require such an immensely high average rate as to make even wagon transportation cheaper for short stretches. The postal principle is utterly impracticable as well as theoretically erroneous.

But while cost increases with distance, it does not increase

proportionately to distance, precisely because of the relation of constant to variable expenses. Hence distance rates do not imply, as some demand, equal mileage rates. Both the cost and the value of the service increase less rapidly than the distance. Even in the relatively simple passenger business mileage rates are used only for comparatively short distances ; the fares to the more distant competitive centres are almost always less than mileage rates. As soon, however, as we have any derogation from the principle of equal mileage, we have a local discrimination.

The simplest limitation on the practice of local discriminations is the enactment of the short-haul principle. This prescribes that the charge to any intermediate point shall not exceed the aggregate charge to the final point. Although there is no vested interest in geographical situation, it becomes an anomaly to charge to a way station the rate to a competing point further on, plus the additional rate from the competing point back to the way station. This is an inversion of the principle of distance. The attempt, however, to enforce such a hard and fast rule is perilous. As long as the law cannot be applied to waterways and to foreign competing railways as well, the anomalies cannot be entirely removed. Unless the railways from the East to San Francisco met the all-sea rates, or the Canadian rates to the coast, they would lose their through transcontinental traffic, and would have to raise their intermediate rates as well. While therefore the Interstate Commerce Law accepts the short-haul principle, it permits the commission to make exceptions ; and among the nicest duties imposed on the commission is that of determining when an exception is legitimate.

But if even this comparatively simple matter requires such delicate handling, what shall be said of the great mass of other discriminations, where the charge to an intermediate station is relatively, without being absolutely, greater than the charge to a more distant point? Among the perplexing problems that arise are the following : Is it legitimate to make export or im-

port rates less than domestic rates, that is, to charge less between the two points for the same commodities when the haul is only a part of the distance to a foreign country? Is it reasonable to make group or blanket rates, that is, to put all stations within a radius of a few tens or even hundreds of miles in a group and make the same charge to all? Is it just to make allowance for "milling in transit" or "floating cotton," that is, to allow grain to go from the fields to the mill, or cotton from the plantation to the compresses, or logs from the forest to the saw-mill, and then to proceed to the point of destination on its proportion of a through rate rather than the local rate? Is it defensible to follow the "basing point" system, whereby local rates are based according to the relative distance of the local points from the competitive points, the rate being ascertained in each case by adding to the through rate to the basing point the local rate from that point back to the local point? Is it permissible to make differentials between cities — as, for instance, on grain, flour, and provisions, where the domestic rates from the West to New York are two cents a hundredweight higher than to Philadelphia, three cents higher than to Baltimore and two cents lower than to Boston, with different figures for ex-lake grain (grain from the West which leaves Buffalo after storage, on a new and independent rate) and still different figures for export rates?

These are only a few of the embarrassing questions which call for decision. Three points are, however, obvious: (1) No hard and fast rule can be laid down. All the circumstances and conditions must be taken into consideration, and these may change from day to day or season to season. (2) It is not only a question of railway practice, but of business and local rivalry. (3) The final decision of such delicate and important matters must not be left to the shippers or the railways, but must be intrusted to some higher authority, which should be not only expert in the transportation business, but completely impartial as between the railways and the shippers, on the one hand, and the rival sectional interests on the other.

214. Railway Regulation.

The preceding discussion has made it clear that some form of railway regulation is necessary. There are five different methods of dealing with railways. (1) The government may own and manage the railways, as in Prussia, Australasia and many other British colonies. (2) The government may own the railways, but leave the operation in private hands, as in some of the roads in North Carolina and all the roads in some minor European countries. (3) The railways may be owned by private companies, but operated by the government, as until recently in Italy. (4) There may be mixed ownership and operation, either with the idea that the competition of the state railways will regulate the private companies, as formerly in Belgium, or without any such intention, as at present in Russia, France, India and many other countries. (5) The railways may be left to private ownership and management, as in England and the United States.

The general discussion of government ownership or management, and the special reasons against it in the United States, may be left to a later chapter. Points one to three may therefore be omitted. On the fourth point the experience of Belgium has conclusively proven that a government railway is not an effective regulator of private companies, and that instead of the government railway drawing the private companies up to its level, the government railways, on the contrary, are invariably pulled down by the stress of competition to the level of the private companies, with personal discrimination and illegitimate preferences of all kinds. This leaves as the practical problem in Great Britain and the United States point five, or the governmental supervision of railways which remain in private hands.

In Great Britain, where the situation is much simpler because of the smallness of the country and the extended sea-coast, competition was eliminated at an early date, and personal discriminations have been correspondingly rare. The

chief questions have been those of relative rates between localities and maximum rates on different classes. After several more or less feeble attempts at regulation a railway commission was instituted in 1873, with judicial powers. Their findings as to facts are final; as to law, they are reviewable by a higher court. In 1888 a law was enacted giving the Board of Trade power to suggest maximum rates, and during the years 1891-94 Parliament accepted the recommendation and enacted maximum rates. Finally, in 1894 it was provided that no railway should increase its existing rates within the maximum without affirmatively proving to the satisfaction of the Railway Commission that the increase was justifiable. It has been claimed that this provision has seriously interfered with the progressive reduction of rates which would naturally come through the increase of business; for the freedom to reduce a rate, and the lack of freedom to restore it if found to be unprofitable, will prevent even the most venturesome railway manager from making a hazardous experiment.

In the United States the early attempts at regulation were confined to the separate states. It was not until 1887 that national supervision began with the enactment of the Interstate Commerce Law. The law was the result of a compromise. It endeavored to maintain competition, and prohibited pools, but it did not try to lay down a rigid short-haul rule. Not only was pooling forbidden, but under the Sherman Anti-Trust Law of 1890 it was subsequently held that even railway traffic associations are illegal. The author of the anti-pooling clause — Senator Reagan, of Texas, who later served on the railway commission of his native state — subsequently confessed that his original opinion had been erroneous, and the Supreme Court of the United States, in declaring the illegality of traffic associations, conceded that they were economically beneficial.

The Act of 1887 prohibited unjust and unreasonable charges, and instituted the Interstate Commerce Commission to enforce the law. Unlike its English predecessor, the American com-

mission is not a judicial court, and its decisions are not final even as to facts. Moreover, it has been settled by the Supreme Court that its powers are limited to declaring a particular rate illegal, but that it has no power to declare what the rate shall be in the future. The question which is still in debate is as to whether rate-making powers should be conferred on the commission.

As to this it must be remembered that the principal complaints are personal discrimination and relatively unreasonable rates. So far as the eradication of personal discrimination is concerned, the efficacy of rate-fixing powers is more than doubtful. Personal discriminations are always secret, and can be secured in a multiplicity of ways through rebates, under-billing, private car charges and illicit agreements of other kinds. The Elkins Law of 1903 has imposed as severe penalties on such discriminations as it is well possible to devise. The surest way of abolishing personal discriminations is by removing the competition which is their cause. To seek to frustrate railway agreements, and at the same time to prevent rebates, is to blow hot and cold at once. With the continued enforcement of the anti-pooling and anti-trust laws personal discriminations will be inevitable; and it is only to the extent that the laws are not actually enforced to-day that personal discriminations are less than they formerly were. No rate-fixing powers will avail one jot.

As to relatively unreasonable rates the great argument against granting the commission rate-fixing powers is that it may hamper railway development and create the danger of sectional strife. In a country which is still in the early stages of its economic development, and where conditions are changing from day to day, to give to a small body of men, however expert, the right to declare rates for the entire country would be to impute to them a wisdom and capacity which they cannot possibly possess. The mistakes which they are sure to make will to that extent retard railway facilities and jeopardize commercial progress. Furthermore, under prevailing Amer-

ican conditions, it will be difficult to keep the commission invested with such far-reaching power free from political influences. As soon as political influences make themselves felt, the commission will be forced, in self-defence, to do what Germany has done of recent years,—that is, to approach as near as possible to a distance tariff, and thus to abandon the advantages of the value of service principle, which has contributed so materially to the low rates and the economic prosperity of the United States.

Thus there are great perils on both sides. To leave the powers of the commission as they now are is to withhold from them the opportunity of rectifying some undeniable abuses; to confer upon the commission great powers would be to impart to our system of railway rates a rigidity which would make us lose on the one hand what was gained on the other. The escape from the difficulty would seem to be a compromise between the private and the public idea. Leave to the railways the right of fixing rates in first instance; give to an administrative body the power of instituting inquiries and reporting facts; put in the hands of a judicial body the duty of passing in last instance upon the reasonableness of the charge. Only in some such way as this can there be a reconciliation of the railways and the public which will tend to insure justice without impairing efficiency.

CHAPTER XXXII.

INSURANCE.

215. References.

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216. Nature of Insurance.

The economic life of man is subject to uncertainty. Even the old adage that there is nothing sure in life save death and taxes is incomplete, because even though the uncertainty does not attach to the fact itself, it does attach to the time of the occurrence or to the magnitude of the phenomenon. Insurance is a device to remove the economic consequences of uncertainty.

From one point of view it might be claimed that there is no such thing as chance. Everything that happens in the universe is obedient to law; that is, it is the result of a cause. If we had full knowledge of all causes, we could predict every event with accuracy, and thus eliminate such a thing as a

chance occurrence. For if we previously knew that it was to happen at that moment, it would not be a chance. On the other hand, the word chance may be used in a slightly different sense. If a pack of cards has been well shuffled, it is an even chance that we turn up at the first deal a black or a red card. Chance here means the degree of probability of an occurrence. The more numerous the occurrences, the more regularity will there be in their happening; so that when we have very large numbers, there is even such a thing as a law of chance.

The degree of uncertainty, however, is not the same thing as the degree of probability. When the probability is zero or small, the uncertainty indeed is zero or small, and there is no chance or little chance. The uncertainty, however, increases only up to a certain point. The uncertainty is greatest when the chances are even, and then diminishes as the chances increase, until the uncertainty disappears, when the probability of occurrence becomes infinite. Certainty means either no probability or no improbability; after the point of even chance has been passed, probability increases as the uncertainty decreases.

The term risk may be applied to either probability or uncertainty. If there is only one chance in a hundred of a man's success in an enterprise, we say that he is taking an immense risk. In that case the probability of failure is immense, but the uncertainty very small. In ordinary economic life, however, men will rarely enter upon any business enterprise unless they think that they have at least an even chance of success, and usually not unless they think that they have more than this even chance. In other words, they will not act unless they feel that although both the probability of loss and the uncertainty increase together, both may be guarded against. Putting it in another way, the risk with which economic activity commonly concerns itself is the degree of uncertainty rather than the degree of probability. The need of protection against risk grows, therefore, with the degree of uncertainty which in economic actions increases as probability increases.

Uncertainty is clearly a disadvantage, which every prudent man desires as far as possible to eliminate. This can be accomplished in three ways: by avoidance, by prevention, or by assumption of risk.

(1) In certain cases involving the investment of capital, he can avoid the risk by joining to the economic transaction in question another which counterbalances it. This, as we have learned (§ 155), is one of the functions of speculation, as in the ordinary "covering transactions" of the cotton, or wheat, or foreign exchange "futures." The scope of such speculative transactions, however, is comparatively restricted.

(2) He can prevent or greatly reduce the degree of risk. If he wants to be assured that his house will not burn down, he may make it absolutely fire-proof. That, however, involves an immense expense which he perhaps cannot afford. If this were the only alternative, he would make the house fairly substantial, putting capital into it up to the point where the additional cost would in his opinion outweigh the chance of loss by fire. An ounce of prevention is worth a pound of cure; but two pounds of prevention are not worth a pound of cure. In modern society as a whole, far greater sums are spent in preventing losses of all kinds than formerly; in fact, government expenditures are to-day to an overwhelming extent of a preventive rather than of a remedial character. But that is because we realize that the cost of a board of health is insignificant when compared to that of a plague, or the cost of education slight in comparison to the economic and political losses due to popular ignorance. Municipal ordinances may compel individuals to erect substantial structures, but the prevention of risk can profitably go only to a certain point. Moreover, no matter how elaborate the precautions, there are certain catastrophes against which no human ingenuity can avail. Earthquake, lightning, flood and tempest will destroy property just as accident, non-employment or illness will destroy personal income. Something more than prevention is requisite.

(3) He can face and assume the risk, but reduce it by combining his own risk with that of others into a group and distributing the losses to the group as a whole. In this way he makes what was uncertain sure. This method, hence, is called assurance or, more commonly in modern times, insurance.

217. Growth of Insurance.

Insurance is in its important manifestations a modern phenomenon, and a result of industrial capitalism. It is due to the fact not so much that men are now more anxious to avoid risk than formerly, but that risks have increased to a prodigious extent. It seems at first blush absurd to say that modern civilization, which implies prudence and forethought, should at the same time mean increased risk. The contrary assertion, however, which assumes that economic progress implies the diminution of risk, is clearly an error. Progress and increased risk are not incompatible. Uncertainty is assuredly to be deprecated ; but if the saving of cost due to a new invention or a new economic process exceeds the risk of loss due to the greater uncertainty, society is justified in adopting it. An express train, for instance, involves more risks than a slow freight, but is none the less an indication of progress. It is only when an eighteen-hour train is put on between New York and Chicago that it becomes a question whether the risk does not outweigh the advantage. Up to that point, at all events, it is either directly or indirectly an economic gain. The increase of risk in modern times is therefore ascribable to the very spirit of invention and better utilization of the forces of nature. Risk and progress increase together. The pace of modern life is rapid ; competition and the factory system have engendered uncertainties, whereas the leisurely mediæval methods of customary price and handicraft industry meant a slow and certain humdrum. Industrial capitalism has virtually created risk as well as the way of meeting risk through insurance.

The beginnings of insurance are to be sought in three

entirely distinct germs: primitive mutual help, the classic bottomry loans and the mediæval rent charges.

(1) Well-nigh all primitive societies practise some methods of collective responsibility. Thus in the earliest Teutonic Frithgilds we find mutual responsibility for loss by murder, fire, theft, or loss of cattle. Again, in the mediæval guilds the principle of joint guarantee was almost universal. The same principle in one sense underlies the modern mutual insurance company. But it would be hazardous to attempt to trace any direct connection between these early groups and the modern business enterprises.

(2) The first¹ permanent and well-authenticated form of business insurance is that of the only kind of enterprise in which capital was employed on a large scale, namely, in oversea trading. Ancient and mediæval insurance started with commercial capital. The marine insurance of the middle ages was an outgrowth of the ancient system of bottomry loan, known in classic Rome as *fœnus nauticum* or *pecunia trajectitia*. If the owner of a vessel needed funds, he could secure a loan on condition that it be repaid with interest, provided the ship were not lost or did not fall into the hands of enemies or pirates. The bottomry contract was therefore in a certain sense an embryonic insurance, but with the peculiarities that the insurance money was paid in advance and that it included a loan as well. In point of fact the loan, rather than the insurance, was the principal thing. When a new form of contract was devised in the Italian towns of the thirteenth and fourteenth centuries, whereby the payment was made after, and not before, the loss of the ship, the loan element disappeared and the contract became one of insurance. The person who assumed the risk was called the underwriter of the risk. In

¹ The only instance of insurance, pure and simple, in classic antiquity that has come down to us is that mentioned by Boeckh, *Public Economy of Athens*, where Antigenes of Rhodes undertook for a payment of eight drachmas per slave to make good his price, as estimated by the owner at the time of his escape.

England these marine underwriters or insurers met in the coffee-houses, one of which at the end of the seventeenth century happened to be owned by Edward Lloyd. This gradually drew to it more and more of the underwriters, until by the middle of the next century virtually all the marine insurance was done at "Lloyd's."

(3) The final source of modern insurance can be traced more particularly in connection with the growth of life insurance. It is true that marine insurance itself after a time developed in part into a kind of life insurance, for it gradually became the custom for the underwriter to insure not only the ship and its contents in the shape of commodities, but also the cattle and the lives of the passengers themselves. Far more important, however, as a source of life insurance was the mediæval system of rent charges. These were utilized to evade the rigor of the usury laws. Loans were made to individuals on the transfer of lands for a definite time, during which the lender enjoyed the fruits. These fruits were in lieu of the interest which was prohibited by statute. Gradually, however, instead of transferring the use of the lands themselves, there was substituted in its stead the obligation to pay a rent or annuity, called a rent charge, because the annual payment was charged on the rent or produce of the land. These annuities were either for life or for a term of years. Life annuities were granted, after a time, even by the church through the *societas sacri officii*.

From decade to decade, however, the speculative element developed. The transaction became popular. It was technically not a loan, but a transfer of land. It yielded large returns,—eight to twelve per cent on the capital invested. More important than all, it was generally accompanied by the condition that the principal should be repaid only if the annuity-payer (the borrower) should die before the annuitant. In the course of time the payment of a capital sum was dispensed with, but an annuity (premium) was paid every year and the capital was handed over only in case of the death of

the premium payer. Thus the system became practically indistinguishable from life insurance. Other mediæval methods akin to modern insurance were the ransom and the marriage portion annuities. In the first case payments were made to individuals to provide against possible capture by brigands. In the second case the church took loans in the shape of annuities from individuals without paying interest, but with the obligation to pay the capital when the daughter married. In the middle of the seventeenth century an Italian by the name of Tonti introduced the principle of survivorship in a group and thus gave rise to the modern Tontine annuity.

Out of these small origins the modern system of insurance has developed. The most important forms of modern insurance are marine, life and fire insurance. Marine insurance has not changed much in character for several centuries. But life insurance could not develop on a large scale until the scientific principles underlying it were thoroughly understood.

In every insurance the (gross) premium payable by the beneficiary who takes out the insurance is composed of two parts,—so-called loading and the net premium, or the sum which is mathematically necessary for the creation of a fund sufficient to enable the company to pay the policy in full when it falls due. The loading is the amount added to the net premium to provide for expenses and for contingencies, like loss of invested funds or failure to earn the anticipated interest. The important constituent naturally is the net premium. In life insurance this is the joint product of the theory of probabilities, the experience of vital statistics and a calculation of interest rates. The so-called mortality table shows how many in a given large number of persons will live to each age, and consequently how many will die at each age. It is impossible to predict in what year a particular individual will die, but it is possible to state with approximate accuracy how many out of a given number will die at any specified age. On the basis of such a mortality table it is a simple arithmetical computation to ascertain the premium necessary to be

charged at any given age in order to create a fund which will accumulate to a fixed point at a given rate of interest. The first attempt to apply mathematical principles to life annuities was made in 1671 by Jean DeWitt, grand pensionary of Holland and West Friesland. The first approximately correct mortality table was constructed by Dr. Edmund Halley in 1693. As these tables became more precise, life insurance developed as a business. The first enterprise started on a really scientific basis was the Equitable Society in London in 1762. In America the first society was the New York Life Insurance and Trust Company, inaugurated in 1830.

The centre of marine insurance is still in England. But with the uncertainties, the vicissitudes and the magnitude of modern business life in the United States, the American life insurance companies have far transcended all others in importance. Of the amount of life insurance in force in the world in 1905 four American companies — the Equitable Life, the Mutual Life, the New York Life and the Northwestern Mutual Life companies — have between a third and a quarter of the entire amount. The figures are as follows:

The four American companies	\$5,680,316,147
All other life insurance companies in	
the world	\$13,862,232,600
Total	\$19,542,548,747

Wherever uncertainty can be removed we find insurance. In addition to life, fire and marine insurance, there have developed in recent years cattle insurance, hail insurance, glass insurance, windstorm and tornado insurance (first in America in 1861), aqueduct insurance (against the risk of damage from a break in the aqueduct or water mains), boiler insurance, burglary insurance, elevator insurance, automobile insurance, credit insurance (through the credit indemnity companies), guaranty insurance (against the risk of breach of trust by officials), accident insurance, illness insurance, out of work insurance, old age insurance, insurance against damages to others

by defects in the insurer's premises, and loss of rent insurance. We even find such remarkable examples as machine insurance (against the risk of damage through the carelessness of workmen), strike insurance, crop failure insurance, gate receipts insurance (in sporting matches) and insurance of the voice of a prima donna. In Russia there is a company which insures individuals against the economic consequences of political persecution, and in England and America there has even been talk of insurance against divorce and insurance against twins.

218. Theory of Insurance.

The essence of insurance is the effort to diminish the risks of uncertainty. Insurance is productive, that is, it involves an increase of wealth, because it lessens the social costs of risk.

We must be careful not to confuse the loss due to the uncertainty with the loss due to the occurrence itself. The occurrence is bound to happen. Death will come, fire will consume, the tornado will strike. In some cases the probability of the occurrence or the amount of the loss may indeed be somewhat lessened by preventive action. A good police force will diminish burglary, an efficient fire department and a good building code will decrease fire losses, carefully devised factory laws will lessen accidents. In all these cases, however, we have to deal with prevention, not with insurance. Insurance takes the fact itself for granted ; it does nothing to eliminate the occurrence. The loss is hence the same, whether we have insurance or not ; the house is burned and there is less wealth than before.

There is, however, in every case an additional loss, due not to the occurrence but to the uncertainty. This can be most clearly seen in the investment of capital. The ordinary man will not assume risks unless he is remunerated for it. In the case of the entrepreneur, indeed, the assumption of risk is one of the elements in enterprise, because he expects in the end to derive profits sufficiently large to compensate for possible immediate losses. But when a capitalist loans funds, and there

is any special degree of risk connected with the transaction, it is a familiar fact that he will increase the rate of interest by a corresponding amount. This increase in the interest rate is an addition to the expenses of the borrower. If the risk is not peculiar to the individual borrower, but is connected with the entire class of transactions in question, and if the borrower utilizes the loan in productive enterprises, the increase in the interest rate becomes an addition to the cost of the product and thus to the price ultimately charged to the consumer. In other words, if the uncertainty could be eliminated, the price of the commodity would be lower and there would be a corresponding gain to the community as a whole. What is true of the investment of capital is true of the employment of any productive factor. Wherever there is an economic action — whether it be the application of labor, the employment of capital, or the utilization of any form of wealth — uncertainty results in a lower degree of productivity or in a smaller surplus of utility than would be the case if the uncertainty were obviated or decreased. Insurance minimizes this uncertainty and is accordingly productive of wealth.

Like transportation, insurance falls under the head of exchange of wealth, while exchange, as we know, is itself a species of production. Improved transportation reduces the cost of having a commodity in one place become a more valuable commodity in another place ; improved insurance reduces the cost of having the uncertainty of the future change into the more valuable certainty of the present. Transportation overcomes the disadvantages of space ; insurance overcomes the disadvantages of time. Transportation is productive because it increases space utilities ; insurance is productive because it increases time utilities.

It will be asked, however, how does insurance minimize uncertainty? The answer is, through the combination of risks. This is a result of the law of probabilities. If we have accurate statistics of fires, for example, for a term of years and take the number of fires with a given number of houses during

that period, we get an average. If the figures in any year corresponded exactly to the average, there would be a certainty in the number of fires, and the only uncertainty would be as to which house would burn. In point of fact, however, in any particular year there will be a variation from the average. According to a well-established law, the probable variation increases only as the square root of the number of cases. If there are a hundred times as many houses, there will be only ten times as much probable variation from the average loss. Hence the larger the number of cases, the less will be the uncertainty as to the amount of loss which will be borne by the group as a whole. Insurance combines the risks into a group, and thus reduces the element of uncertainty. The risk of the group is less than the sum of the risks of the individuals who form the group.

An individual can manifestly not afford to insure himself, because the insurance fund which he would be obliged to accumulate would be out of all proportion to his possible earnings. An immense corporation, like a steamship company with hundreds of vessels, may practise self-insurance with a better chance of success ; but the advantages of having the insurance business entrusted to a separate class is so pronounced that self-insurance is extremely rare. The great benefit of an insurance company is not only that the risks are combined, but also that they are transferred to a class who can afford to make a special study of the problem, and who can thus reduce the cost of insurance by displaying their ability to estimate uncertainties. Whether the company is a stock corporation or a mutual company is of importance only as to the ultimate distribution of the profits of the enterprise : in the one case, as in the other, however, the management of the business is confided to a class of experts. The more adept the insurance companies, and the more scientific their methods, the closer will be the correspondence between the preparation for, and the fact of, loss and the smaller will be the accumulation of the necessary insurance fund, the lower will be the insurance pre-

mium, and the greater will be the net gain to the community. Insurance properly conducted is the opposite of gambling. If any one takes out an insurance policy, he frees himself from an existing uncertainty and transfers the risk to some one who is more qualified and ready to assume it; if he makes a wager with another, the newly created uncertainty attaches to both. Insurance is the transfer and reduction of risk; gambling is the creation and increase of risk.

219. Methods and Regulation of Insurance.

The primary function of the insurance company is to reduce uncertainty. Insurance companies as business enterprises, however, seek to enlarge their profits in other ways.

(1) Sometimes insurance companies endeavor to combine the business of insurance and of prevention. Strictly speaking, the insurance premium is the payment made to the company to induce it to assume the risk. But fire insurance companies, for instance, conduct the fire patrol system, and organize for protecting coverings in case of fire; and the cost of this is added to the insurance proper and is included in the so-called premium. In reality, however, as we have seen, this is prevention, not insurance: it tends to reduce the loss through the occurrence, not the uncertainty of the occurrence. In the same way certain fire insurance companies make a lower rate when the insurer engages to use certain precautions, like better buildings, automatic fire-sprinklers, etc. This again is not insurance, but prevention.

(2) Life insurance companies do an immense business not alone as insurance companies but as media of secure investment. As a consequence there is a great variety in the kinds of policies issued. The ordinary form is the annual dividend policy. Here, by the time the second annual premium is payable by the policy holder, a dividend is declared on the policy. This may take the form of a "reversionary addition" which is added to the amount of the insurance, the premium remaining the same; or it may be a "cash dividend," necessarily smaller,

which can be used to reduce the premium, the amount of the insurance remaining the same. With every year this dividend grows, and after the lapse of several years the policy acquires a "cash surrender value," that is, a sum which the company will pay to the holder on the surrender of the policy. In lieu of the annual dividend policy, the holder may prefer a deferred dividend policy, according to which a cash sum or its equivalent will be paid at the end of a term of years. Thirdly, he may choose a policy without any dividends at all, the so-called non-participating policy, under which he obtains his insurance at a lower rate in consideration of the fact that he waives all claims to dividends. Again, the policy may be either a life policy payable upon his death or an endowment policy, whereby the insurance is payable to the beneficiary at the expiration of a certain period. These endowment policies may, like the others, be issued either on the annual dividend or the deferred dividend plan. Finally, the policy may be a term policy or a limited payment life policy, where the premiums do not continue for life, but are limited to a definite number of years, after which the policy becomes "paid up" and remains in *status quo* until the death of the insured. Moreover, there may be all manner of combinations of these various kinds of policies, such as continuous instalment endowment, yearly renewable term, return premium, and double endowment policies.

It is especially in such cases as this, where the accumulated surplus becomes so enormous, that the wider problem of public policy assumes considerable importance. In the case of banks, as we know, legislation is needed to protect the reserve. In the case of insurance which is primarily a method of making accumulations to protect the great mass of beneficiaries, the need of regulation is even more obvious. Almost all of the American states have a legislative code and an administrative department designed to control the various classes of insurance companies.

The recent scandals connected with the financial manage-

ment of the Equitable Life, the greatest insurance company in the world, have emphasized the necessity of a more carefully devised legislation and a more effective supervision calculated to enforce responsibility and to guarantee solvency. In some countries, as in Australia, the public is so solicitous of the interests of the policy holders that the government has even assumed the management of the insurance business, at least in part. Radical as such a step may seem, it is at all events indisputable that there is both room and need for careful public scrutiny and effective social supervision of a business that has intertwined itself with the very roots of modern economic life.

Part IV.

Conclusion.

CHAPTER XXXIII.

GOVERNMENT AND BUSINESS.

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221. Socialism.

Government was devised in large measure to afford protection and to subserve the economic interests of the community.

From the very outset therefore more or less influence was exerted by the constituted authorities on the progress of wealth. While the state, however, has always participated in economic life, there have been two opposing theories, neither realized in practice, but both nevertheless advanced as ideals toward which human effort should be directed.

On the one hand we have the advocates of *laissez-faire*. Their programme is "hands-off," and their aspiration is to reduce the function of government to the narrowest possible limits. The logical conclusion of such a theory is anarchy or no government. For even if we accept the "policeman theory" of the state, — the doctrine that government is instituted only to protect liberty and property, — it is obvious (as was pointed out in Chapter XI) that protection involves some restraint on the liberty of others. If therefore restraint or intervention is to be completely abolished, there must be no restrainer, that is, no government. While we may reasonably object to the ordinary anarchist who illogically uses violence in order to bring about the absence of compulsion, the theoretical anarchists like Tolstoi and Kropotkin in Russia, Proudhon and Réclus in France, Warren and Tucker in America, are true to their premises. If we are to have no immixture of government in the economic life of the individual, it must be conceded that the only sure means of compassing the desired end is to abolish government.

At the opposite pole are to be found those thinkers who discover the root of all economic evil in private property. Here, again, the logical conclusion is that of communism, the entire sinking of individual property rights in those of the group. This is, however, so manifestly opposed to the constitution of human nature that the idea has remained a counsel of perfection. Every communistic experiment has been more or less short-lived. Less thorough-going but almost equally ideal is socialism, which is willing to admit private property in consumption, but demands a community of production, that is, the assumption by organized society of all the means of pro-

duction. According to the "scientific socialists" private property in the means of production is an anachronism.

While socialistic theories are almost as old as economic speculation itself, it is only since the advent of the modern industrial system that socialism has taken a deep hold on the mass of men. This is obviously due to the fact of the prodigious increase of wealth, coupled with the triumphant march of democracy,—both of them, as we know, the results of industrial capitalism and the factory system. The unlocking of the secrets of nature, the conquests of new worlds, and the vast opportunities opened to private initiative have made this the era of individualism. The hardy, the venturesome and the conspicuously able, together with the adroit, the fortunate and the occasionally unscrupulous, have hailed the advent of these well-nigh limitless chances to forge ahead, with but scant regard to the coincidence between their interests and those of others. The Anglo-Saxon "Each for himself, and the devil take the hindmost," like the Romanic "God helps him who helps himself," has been the watchword of modern economic life.

In contrast to this idea is to be noticed the solidification of a wage-earning class, now definitely separated from the ownership of the tools of production. Their very progress to a more human standard of life has made them painfully conscious of the inequalities of wealth and opportunity, of crying social evils and miscarriages of justice, and of the seizure by individuals of much that seems to them the national heritage. Instead of being the voice of envy and confiscation, as it often appears to the smug, the sleek and the contented, socialism is to the elect few an inspiring ideal and a veritable religion; while in the case of the mass it is an inarticulate cry of anguish and a vague expression of the demand for social progress.

Yet with all its inspired ideals socialism is as one-sided as anarchism. If anarchism forgets the state, socialism forgets the individual. If anarchism exaggerates the possibilities of private action, socialism exaggerates those of public action. The economic theory of "scientific socialism" is, as we have

repeatedly seen, completely erroneous. It starts out with the defective labor theory of value; it unjustifiably restricts labor to manual labor; it misconceives the theory of profits; and it erects into a veritable fetish the doctrine of class conflict. Socialism as a movement, however, is not bound up with any such scientific or unscientific theories. Practical discontent, not scientific formulæ, has engendered modern socialism; to Lassalle and not to Marx must be ascribed the real paternity of socialism as a practical movement.

In his anxiety to escape from the evils of the present, the socialist is willing to entrust himself to the fortunes of a dubious future. Impatient of the shortcomings of distribution, he does not realize that his scheme will endanger production. Desirous of eliminating profits, he does not see that he will stifle progress. In his effort to remove actual inequalities he bids fair to reduce economic life to the hopeless level of a dull and low uniformity. With human nature as it exists at present, and as it bids fair to continue for an incalculable future, socialism, if ever realized in practice, would be the death knell of economic advance and true social betterment.

222. Development of Public Ownership.

To affirm, however, that socialism, or the assumption by government of all the means of production, is theoretically indefensible and practically injurious, does not imply that the government must refrain from assuming any of the means of production. If there are any criteria by which to distinguish between different kinds of enterprises, it is possible to advocate government ownership in some cases without incurring the imputation of socialism, or involving the necessary acceptance of government ownership in other cases.

It may be laid down in general that there are three conditions of government ownership. The government must do what the private individual cannot do, will not do and ought not to do. Private enterprise can, for instance, no longer provide an army or a navy. Again, private enterprise was not

willing to construct the first New York subway. Finally, it is universally agreed that such matters as justice and police protection ought not to be left as formerly to private individuals. There is, however, still a large fringe of occupations where there is an opportunity of discussion as to whether private individuals ought to be permitted to carry on the enterprise. It is in this fringe that the modern problem of government ownership has arisen.

Government enterprise in such occupations may be divided into fiscal and social monopolies. The government may decide to monopolize a business for purely fiscal reasons. In the case of certain raw materials or easily manufactured articles of wide consumption which readily lend themselves to the purposes of taxation, the government may prefer to conduct the operation itself and to enjoy the monopoly profits. Thus some of the European governments have a monopoly of the sale or sometimes of both the sale and the manufacture of tobacco. In others we find a government monopoly of salt, and in the Eastern countries we find monopolies of opium, of tin and of other commodities. The monopoly of spirits, however, as in Russia, Switzerland and South Carolina, is only partly fiscal in character.

A consideration of fiscal monopolies belongs properly to the science of finance. It may be said, nevertheless, that in the most progressive countries fiscal monopolies are not desirable, because the government at best secures as revenue only the surplus between cost and selling price, while in the case of private competition there would be a tendency for cost to fall. In the former case, therefore, the public really loses more than the government receives, while in the latter case the government may secure the same revenue through indirect taxation, and the price of the product to the consumer will nevertheless be lower. When the political objections to a high indirect tax, however, seem considerable, or when the chances of private competition are increasingly remote, it may be wise to secure the desired revenue by fiscal monopoly.

Some fiscal monopolies, indeed, are no longer tolerated by public opinion. This is in general true of lotteries, which were extensively employed in former times: especially in America many churches and educational institutions were started through this agency. Government lotteries were probably based on the quaint defence of Petty in the seventeenth century: "A lottery is properly a tax upon unfortunate self-conceited fools. The world abounds in such fools; it is not fit that every man that will may cheat every man that would be cheated. Rather it is ordained that the Sovereign should have guard of these fools, even as in the case of lunatics and idiots." Nowadays, by a revulsion of popular feeling, not only public but private lotteries have disappeared in Anglo-Saxon countries. The continuance of the government lottery in southern Europe and in even so enlightened a country as Prussia is as surprising as it is deplorable.

Contrasted to the fiscal monopolies of government are the social monopolies, that is, enterprises which are undertaken by government for general social reasons. If we look at the existing examples of government ownership, we shall find that they may be included under the following heads:

I. Transfer of values: (1) Coinage; (2) Non-Metallic Money; (3) Banking.

II. Transfer of Products: (1) Markets; (2) Docks and Piers.

III. Transmission of Intelligence: (1) Post-Office; (2) Telegraph; (3) Telephone.

IV. Transportation of Persons and Freight: (1) Roads; (2) Canals; (3) Ferries; (4) Bridges; (5) Railroads; (6) Express Companies.

V. Transmission of Utilities and Power: (1) Waterworks; (2) Gas and Electric Light Works; (3) Electric Power Works; (4) Steam-Heat and Hot-Water Lines; (5) Irrigation and Power Canals.

What is common to all these enterprises is that they are of fundamental social importance, and either lie or may lie at the

basis of general industry. This is, in fact, the criterion which distinguishes them from ordinary occupations,—the existence of a sufficiently widespread common interest and public importance to warrant their assumption by the government authorities. This interest and importance did not always exist, do not everywhere exist at present, and are not found in the same degree in the various occupations or countries. With wide variations in detail, we can trace a general law of development, in five stages :

(1) Everywhere at first all of the above enterprises are in private hands, and are used for purposes of profit and sometimes of extortion, like the highways, the coinage and the post offices of mediæval Europe, or the early bridges, canals and markets.

(2) In the next stage they are "affected with a public interest" and are turned over to trustees who are permitted to charge fixed tolls, but required to keep the service up to a certain standard. This was the era of the canal or turnpike trusts and companies.

(3) In the subsequent stage the government assumes the business, but manages it for profit, as is still the case in some countries with the postal and railway systems.

(4) In the fourth stage the government charges tolls or fees to cover expenses only, as was recently true of canals and bridges, and as is the theory of the postal system and municipal water supply in America to-day.

(5) In the final stage the government reduces charges until finally the service is free and the expenses are defrayed by a general tax on the community. This is the stage now reached in the common roads, in the coinage, in most of the canals and bridges, and which has been seriously proposed by officials of several American cities for other services, like the water supply.

It is obvious, however, that many of the industries referred to have not gone through the whole of this evolution, and that some of them still remain in the first stage. It is also clear

that where we find other isolated examples of government ownership, as in the case of powder mills or shipyards or ordnance factories or even in the insurance business and frozen meat transportation of Australasia, we must ascribe them to the sense of the overwhelming public importance of the enterprise and the inadequacy or proven unfitness of private individuals to conduct them. What, then, are the reasons that weigh with some communities in inducing them to permit industries of paramount public importance to remain in private hands?

223. Conditions of Public Ownership.

The three conditions which must be carefully weighed before government ownership and management of any industry are decided upon are: (1) the simplicity or complexity of the enterprise; (2) the amount of capital invested; and (3) the effectiveness or ineffectiveness of social control.

In the case of the industries included on page 564 under the head of transfer of values there is comparatively little discussion. The coinage of money is now everywhere conceded to be a public function. In the case of the banking business, however, which is far more complex, calls for a large capital and is easily made amenable to public control, the decision is clearly in favor of private ownership. The only moot question is as to whether the paper currency should be issued by private banks or by the government. The decision of this question is, as we have seen, largely dependent upon political conditions.

Coming to the industries mentioned under the second head, it is to be noted that the markets, which in the middle ages were almost exclusively private, are now generally in public hands. In England as elsewhere in Europe the vested rights of individuals in the markets are being bought out by the local corporations. In America the large provision markets are frequently owned by the cities, and yield a substantial income. In the case of the docks and piers, much the same development has taken place. In America the progress has not been so rapid as abroad, but in cities like New York the municipali-

zation of the water front is leading to a great increase of facilities as well as of public revenue.

When, however, we come to the last three classes in the schedule, we reach burning problems. In a few of the subdivisions, indeed, the controversy has been laid to rest. For instance, in the case of the common highways the process is about complete and the private turnpike companies have well nigh disappeared. In certain rural sections there is still some debate as to whether the roads should be toll roads or free highways, but in general it may be said that the discussion has ceased.

The same is true in the main of bridges and canals. The old private canals have almost entirely vanished, and it is only about a quarter of a century ago that canal tolls were abolished on the Erie Canal. In the case of ferries a similar development is to be noted; in Boston and New York City the process of municipalization is proceeding apace.

The same considerations apply to the fourth class of industries. Everybody, with the exception of extreme individualists like Herbert Spencer, is agreed that the post-office should be in public hands. The amount of capital invested is insignificant, nothing being needed but the sites and buildings and a few simple devices for stamping and transporting the letters; the management also is comparatively simple. Yet even in the post-office it is a notorious fact that government management is more costly than private management. An American postmaster-general once stated that if he were at the head of a private company he could perform the postal business about one-fourth cheaper, by a more effective administration and consolidation of post-offices, which is now impossible because of political conditions.

Nevertheless, no one would think of abandoning the government postal service. The only controversy arises over what are in other countries ancillary features of the service. Such, for instance, is the parcels post. Almost everywhere, except in the United States, this is a well-recognized postal function;

here, however, the private express companies are so firmly entrenched that there seems little prospect of altering the situation. Yet all the arguments in favor of a letter post would apply almost equally well to a parcels post.

In the case of the telegraph practically the same is true. The investment of capital is indeed somewhat greater than in the case of the post, but it is still insignificant as compared with other interests, while the complexity of management is likewise slight. In every other country in the world, including England, Australasia and Switzerland, the telegraph, although frequently starting out in private hands, has been brought under government management. In the United States, in fact, the telegraph began as a government business in 1844, and was abandoned chiefly because the postmaster-general at that time erroneously thought that it would prove a dire failure, and did not desire to commit the government to a hazardous experiment. Yet the originator of the telegraph, who was wise enough to appreciate the final outcome, did not conceal his opinion that it ought to form a natural adjunct to the government post-office.

The chief reason why there is not a louder outcry for a government telegraph is that the abuses of the private telegraph are not important. On the other hand, it must not be forgotten that while postal rates are lower here than abroad, telegraph rates are much higher, for short as well as for long distances. The use of the telegraph service in the United States can accordingly not be compared with that in other countries. Every argument in favor of government post applies almost equally to the telegraph.

Virtually the same is true of the telephone. The complexity of management is indeed slightly greater than in the telegraph, and it requires somewhat more care to keep up to the level of modern science. Nevertheless the difference is not material. Most countries have nationalized their telephone system, and even in England, where the private telephone was at first in complete control of the field, recent legislation has

paved the way for its assumption by the government. Under government management abroad telephone rates are far lower, and the use by the public far greater than in the United States. In both the telegraph and the telephone a large part of what in the United States constitutes the profits of a private monopoly accrues elsewhere to the public in the shape of lower charges and wider usefulness.

On the other hand, while the arguments hitherto advanced would lead to governmental assumption of the telegraph and the telephone, they would lead to precisely the opposite conclusion in the case of railways. There are, in fact, three sets of arguments against government railways,—the economic, the fiscal and the political argument.

(1) The railway is the most stupendous of modern industries. Not only is the capital account enormous, but the railway business calls for the most delicate handling, and must needs pay for the highest possible business ability. Railway presidents of single lines to-day receive salaries superior to that of the President of the United States; for without consummate capacity the attempt to run a railway would be a failure. The time may come in the distant future when democracy will be willing to pay higher salaries, and when the ablest men will be ready to give up comfort and wealth for the more ideal end of serving the public. Under present conditions in the United States, however, to turn over the greatest, the most complex and the most fundamental industry of modern times to the government would inevitably lead to such a decrease in efficiency as to become well-nigh intolerable.

(2) The revenues and expenditures of our railways are about triple those of the government. The entire budget would then depend upon the temporary prosperity or ill fortune of the railway system. In bad times the railway revenues shrink by tens or even hundreds of millions. This would so embarrass the income side of the national budget as to necessitate a complete revolution not only in our tax system, but also in our entire budgetary methods. This point, hitherto almost

completely overlooked, would in itself suffice to defeat the scheme for government railways.

(3) In comparison with railway charges within the country, tariff rates into the country are of slight importance. The political demoralization that occurs whenever a new tariff is framed is familiar to all. The imagination shrinks from the thought of what would happen in the United States if the necessarily continuous manipulation of railway rates were entrusted to the tender mercies of the legislature, or of an administrative body under its immediate influence.

These arguments against government railways in the United States do not of course imply that the railways should be let alone. Social control of private railways, however, has as yet scarcely begun, and until the ineffectiveness of social control has been affirmatively proven it would be rash in the extreme to plunge into government ownership.

224. Municipal Monopolies.

There still remain for discussion the fifth class of businesses mentioned on page 564. It will be observed that with the exception of the last item they have two points in common: they are local enterprises and, because they depend on the use of the streets which cannot be continually torn up, they tend to become monopolies. It is for these reasons that they are usually called municipal monopolies, or public utilities; and because of these facts the street railways or omnibus lines are ordinarily included in the same category.

In the United States municipal ownership has been common in the case of waterworks, somewhat less usual in electrical lighting, rare in gas works, and only just beginning in street railways. In Great Britain, on the other hand, waterworks have ordinarily been in private hands, but gas works to a large extent under municipal control, while of late there has been a marked tendency toward municipal tramways and electric lines. In 1902, for instance, there were 118 municipal tramways with 855 miles of track, as compared to 115 private

tramways with 598 miles of track. In the United States, in 1902, fifty-three per cent of all waterworks were in the hands of the public, and in cities of over 8,000 population the waterworks were owned by the municipalities in 135 cases, by private companies in only 36 cases; while the gas works were owned by the cities in only 5 cases, by private companies in 130 cases. At the same date only 13 cities owned their electric lighting plant. The sole examples of a municipal street railway in 1905 were the New York and Boston subways, though Chicago was endeavoring to assume the ownership and management of its street railways.

In the case of the water supply the arguments are decidedly in favor of municipal ownership. The social interests are of the most commanding importance, and there is the utmost simplicity of management. When the watershed, the aqueduct and the water-pipes are ready, nothing is needed but a few engineers to regulate the pressure and a few workmen to repair leaks. It is true, indeed, that with the growth of cities the necessary capital augments, until as in the case of New York tens of millions may be needed. On the other hand it must be remembered that water rates can easily be fixed at such a point that, without unduly burdening the public, they will be sufficient to defray interest on the debt as well as the running expenses. Even here, however, the experience of our large cities shows how important is a good system of municipal accounting in order that the capital and income accounts may be kept distinct, and in order that the public may understand what is the actual cost of the enterprise.

With the gas business the matter is not so simple. Here the complexity of management is considerably greater. The stimulus of private initiative is needed to a far greater extent in order that the management may avail itself of the constant improvements in the process, thus leading to a reduction of cost. In the one great example of municipal gas ownership that has existed in America, — namely, in Philadelphia, — the results were satisfactory neither to the treasury nor to the con-

sumer. Whatever may be said of the dubious methods employed by the private monopoly to which Philadelphia has farmed out the management of the gas service, there is little doubt that the consumer as well as the city has profited in a noteworthy degree.

In the case of the electric light the arguments in favor of municipal ownership are somewhat more convincing, at all events in the smaller towns, where natural conditions are favorable and where the outlay is relatively inconspicuous. Although the complexity of the enterprise is largely minimized, considerable care must still be observed in the financial management.

Finally, with street railways the arguments for municipal operation are less strong than in either the water or the electric light supply. For here, although the complexity of management is by no means so great as in the ordinary railroad, it is of far more importance than in the telegraph, the telephone or waterworks. It is unlikely that the municipal authorities of any American city would have had the courage to undertake such great revolutions in the methods of transportation as have been completed during the last decade in our chief cities. Furthermore, the financial problems involved are intricate. Even if municipal ownership be decided upon, however, the argument would seem to be in favor of following the plan of the New York subway, — namely, government ownership but private management under conditions fixed by the municipality, which should safeguard the social interests of the community, the needs of the treasury, and especially the legitimate demands of the employees. In this way the best features of each system might be retained.

It is obvious, then, that in considering this problem we must not be led away by preconceived notions on either side. The outcry of socialism is a bugaboo, for in these enterprises free competition is inapplicable. The only choice is between a public monopoly and a private monopoly under social regulation. The problem is not simply the abstract one of the general limits of government activity, but the very concrete one as to how

far the practical political conditions in any locality permit of the application of the abstract principle. We may all agree that in these enterprises the public element is the predominant one. We may all concur in the belief that even where it seems desirable to retain for a time the management in private hands, the period may come when the advantages to be derived from private management under social control will be outweighed by the benefits of direct government operation. Yet in a democracy it is always wise to make haste slowly and to refrain from taking a leap in the dark. It is more than likely that the future has in store a complete transference of quasi-public enterprises to the public itself, if for no other reason than to check the corruption and control of local politics by vast business enterprises. Until general economic and political conditions, however, are ripe for such a radical change, the probable result would be the substitution of one kind of corruption for another, and the realization of an abstract principle at the cost of efficiency and progress. That social control of quasi-public enterprises will in the near future undergo a marked development is beyond all question. But it is not until social control has been tested and found wanting that we shall be ready for the further step of public management of the gas supply and the street railways.

225. Government Regulation.

If government ownership, is, as we have seen, limited to a comparatively narrow range of occupations, government regulation of private enterprise is widespread. There are two currents discernible in the course of history : one has set away from government interference ; the other in its direction. The progress of liberty and the recognition of the advantages of competition in modern times have caused the government to abandon many forms of regulation which were common in ancient and mediæval civilizations, but the complexity of modern capitalism and the abuses of freedom have necessitated the development of new kinds of government activity.

The chief forms of modern government interference with private industry may be put under the four heads of action in behalf of consumers, of producers, of investors and of the community in general.

(1) In the middle ages the government interposed in behalf of the consumers either to guarantee good work or to insure reasonable price. Both of these forms of interference have disappeared in general industry to-day, because custom has been replaced by competition. The producer who gives short measure or turns out a defective product or charges an exorbitant price cannot retain the trade in the face of competition. It is only where competition disappears, as in the case of the actual monopolies discussed in the preceding sections of this chapter, that social control becomes requisite. Unregulated private monopoly is a menace to the consumer. In modern times, accordingly, we find that the chief form of interference with competitive industry in behalf of the consumer is legislation to safeguard health, as in the case of food inspection and quarantine regulation.

(2) On the other hand, the interests of the laborer have been so materially affected by the advent of the factory system that modern interference on behalf of the producers is well-nigh exclusively limited to them. As we have learned (§ 181), there are five classes of such interference, all of which, except the last, are rapidly becoming universal: (a) legislation to safeguard health, through the so-called factory laws, applicable to men, women and children alike; (b) legislation to ensure safety through employers' liability laws; (c) legislation fixing maximum hours of work, as in the case of the eight-hour law for miners and public employees; (d) compulsory insurance against illness, old age or lack of employment; and finally (e) legislation fixing minimum wages, as in Australia and New Zealand.

While the advisability of some particular application of this principle in a given country is naturally open to question, there is no longer any doubt, as we have learned in a previous

chapter that such forms of interference are not necessarily incompatible with the highest ideal of liberty, in the positive and social sense. Experience alone can disclose the line beyond which such legislation may imperil business enterprise and thus injure the prospects of the laborer himself. To the social economist, however, who remembers that the objective is man in relation to wealth rather than wealth in relation to man, the prosperity of a so-called successful business which rests upon a degraded and miserable labor force is illusory and not really worth having.

(3) In former times the striking example of interference by government in case of investment was in behalf of the borrower. The usury laws, designed to protect the unfortunate debtor, have, as we know (§ 171), been rendered almost completely unnecessary through the growth of competition in the loan of capital. This same development has, however, brought about the need of intervention of the opposite kind. To-day it is the lender or investor in corporate enterprise, and not the borrower, who requires protection. Nowadays it is rare to find any one who is not a depositor in a savings bank, a policy holder in an insurance company, a stockholder in a railroad or other corporation, or the possessor of a bank note or a bank account. So wide and intricate are the ramifications of modern credit and finance that investors or creditors are obliged to rely more or less implicitly on the representations and good faith of the managers of these enterprises. Sad experience, however, has shown that the conception of real trusteeship among those entrusted with the funds of others is by no means so sacred as it ought to be; and government has been obliged everywhere to take precautions to define and to enforce responsibility. Here, again, there are dangers on both sides, the risk of over-rigidity which will hamper legitimate enterprise, and the danger of lax accountability which will destroy confidence. That, however, some solid measure of regulation is requisite can no longer be successfully disputed.

226. Bounties and Subsidies.

We come, finally, to the case of government interference in behalf of the general interests of the community. This takes the form of protection, which has already been discussed in a separate chapter, and also of bounties and subsidies.

The danger of such intervention is that particular interests may foist themselves upon the legislator in the guise of general interests. Bounties may be classified as (*a*) military bounties, (*b*) forest bounties, (*c*) agricultural and industrial bounties, and (*d*) land transport and shipping subsidies. The first two are not primarily economic in character and may be passed by. Agricultural and industrial bounties were frequent in former centuries, but disappeared in the main with the downfall of the mercantile system. The chief modern example is that of beet sugar in Europe, and it is so instructive as to merit some attention.

The continental blockade under Napoleon put a stop to the colonial trade in cane sugar and gave an impetus to the culture of beets. After peace was established the beet sugar industry was strong enough to claim and to receive encouragement in France, and the movement spread somewhat later in other continental countries. Cane sugar was shut out, and as the yield of beet sugar now exceeded the domestic demand, it became necessary to secure a foreign market. This was accomplished by exempting sugar for export from the internal excise tax imposed for revenue purposes, or by a drawback. The drawback was frequently greater than the excise tax, and thus was to all intents a hidden bounty. Other countries even granted direct bounties on export.

The effect of this legislation was to confine the market of each country to domestic sugar, to raise prices greatly at home, to diminish domestic consumption, to provide a large surplus for export, to lower prices on the world market enormously, and ultimately to cause a serious financial loss to each bounty-granting country. While the cane sugar production of the

world increased from 1,200,000 long tons in 1853-1854 to 4,300,000 tons in 1903-1904, that of beet sugar rose from 200,000 tons in 1853-1854 to 6,700,000 tons in 1901-1902. In the half-century the proportion of beet sugar rose from 14 to 58 per cent of the total output of sugar.

The system of sugar bounties gave Great Britain cheap sugar and made British jams and preserves world-famous; but it ruined the West Indies, brought about the Cuban war, and was continually more burdensome to the European continent. After several unsuccessful attempts the Brussels convention of 1903, participated in by the chief European countries except Russia, abolished all bounties and excessive drawbacks as well as all discrimination, beyond a certain moderate point, in the domestic market against foreign sugar. Expenses thereupon decreased to such an extent that many countries also lowered their excise taxes. As a consequence domestic prices fell, export prices rose, beet sugar became more profitable and government expenses were reduced.

The history of sugar bounties is an excellent illustration of the danger and ultimate inefficacy of agricultural or industrial bounties on a large scale. It is for this reason that such bounties are now extremely rare. In the United States the only recent examples are the bounty on sugar, which was granted during the early nineties for the four years that foreign sugar was imported duty free, and the insignificant bounties for beet sugar granted by a few of the Western states.

Shipping subsidies, on the other hand, are still a topic of active discussion. The experience of the United States with its subsidies to the Collins and Pacific Mail lines during the two decades from 1845 to 1867 was so unsatisfactory that the system was abandoned. More recently, however, subsidies not only in the shape of postal subsidies but also for tonnage, and in some cases even for construction, have been inaugurated by Great Britain, Germany, France, Japan and other countries. In the United States they have thus far been limited to postal subsidies. The argument for shipping sub-

sides is akin to that for protection in general, which has already received attention. But before such subsidies are granted on any considerable scale it must be shown that a large merchant marine is not likely to develop of itself, that the aid conferred by government will really stimulate the efficient rather than shelter the inefficient and that the subsidy will not be confined to a few favored enterprises.

CHAPTER XXXIV.

POVERTY AND PROGRESS.

227. References.

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228. Luxury.

In our study of the distribution of wealth attention was devoted primarily to the shares of the various classes in distribution. To the individual, however, the share of the total product that accrues to the particular class is of slight consequence when compared to his own participation in this share. The economic problem to him is as to the amount of wealth that he personally can secure. To the community as a whole, also, it makes a great difference whether a given sum of wealth is shared in an approximately equal fashion among its separate members or whether a minority lives in affluence and the mass in squalor. The coexistence of luxury and poverty has always been the stumbling-block of the social reformer. To this most baffling question we must now turn our attention, although almost every one of the preceding chapters has indirectly touched upon the same subject.

The problem of luxury in itself, and not considered as a concomitant of poverty, involves few difficulties. The discussion, however, has often been one-sided; for here as elsewhere extremists have not been lacking. The apologists for luxury, for example, have from time immemorial sought to justify themselves by the plea that luxurious expenditure is beneficial because it affords employment to labor. The merest tyro in economic reasoning, however, will at once perceive the weakness of this hoary argument. If luxurious expenditure is productive simply because it employs labor, the accidental breaking of a window-pane or the wanton destruction of a growing crop is also productive in so far as it will require labor to repair the damage. The fallacy clearly consists in the assumption that the wealth spent in luxurious outlay would otherwise not be devoted to production. Obviously, however,

if the spendthrift chooses not to waste his funds, they will take the form of the purchase of securities, of investment in some enterprise or of a cash balance in the bank ; and in each case they will be devoted to production and thus give employment to labor.

On the other hand, the opponents of luxury go to an equally extravagant length. "Plain living and high thinking" is indeed a most admirable moral precept, inattention to which has resulted in the ruin of many an individual. The evils of ostentation and the passions of sensuality are as glaring as they are reprehensible. From a broader point of view, however, plain living may be carried to an extreme. Civilization, as we learned at the very outset of this treatise, depends on the multiplication of wants. If goods are to be divided into necessities, conveniences and superfluities, progress may be described as the process of converting superfluities into conveniences and conveniences into necessities. The diversification of consumption lies at the root of human development. It is undoubtedly true that we can have no lasting progress without the accumulation of capital and the application of labor to raw material ; but it is equally evident that while a population every member of which is devoted entirely to wheat-raising or to the making of rough clothes or shelter may be very estimable, it will indisputably be lacking in many of the qualities that we associate with higher civilization. It would, to mention nothing else, leave no room for the whole domain of art, which is in some respects the supreme achievement of the human race. Yet no one will make fine or beautiful things unless there is a demand for them, and this demand necessarily implies luxury somewhere. Thus we seem to reach the position that luxury is evil and at the same time indispensable.

The difficulty, however, is really not serious. Luxury of some kind is indeed inevitable, but what is one man's luxury is another man's necessity. The real test of the economic legitimacy of luxury is the relation between the economic importance of the outlay and the economic importance of the result to the

community as a whole. If a particular individual is markedly important for the community, society will not and ought not to begrudge him a more or less lavish expenditure in keeping with its estimate of his public importance. There is usually a close relation between consumption and production. It is true that in a young country like the United States men will often accumulate wealth for the sake of power and lead comparatively simple and busy lives. Almost everywhere else, however, it is a fact, and even in the United States it is a tendency, for people who acquire wealth easily to spend it lavishly. To the extent, therefore, that consumption is the objective point of production, the prohibition of luxury would be apt to work as an impediment to enterprise, and what would be gained at one end would be lost at the other. From this point of view the luxury of an individual who is economically important in the sense that he is adding materially to the productive forces of the community is justifiable.

Luxury as a legitimate economic phenomenon may, however, be abused by those who possess the wealth or power without enjoying the real social importance. They spend, but give nothing in return. In the case of private individuals the most obvious example is the man who has received a large fortune by gift or inheritance and who has done and is doing nothing of value to the community. Luxury of this kind is economically injurious. But luxury may also be associated with the government. Where there is an absence of constitutional liberty, the individual potentate may abuse the privilege, and we reach a situation like that in the time of Louis XIV in France, where the luxury of the court proved to be a heavy burden to the people. In a democracy, however, this danger does not exist, and there is even a risk of going too far in the opposite direction. The president of republican France indeed receives a special allowance for entertainments; but the lack of suitable homes and adequate salaries for American diplomatic representatives abroad has long been a national mortification.

The real economic ideal is the socialization of luxury, in the sense either that private luxury should give way to public luxury, or that the luxury of the individual should be confined to those who are of true importance to the community and who are transfused by the sense of social responsibility. The economic test of all expenditure is the creation of a surplus of satisfactions. The wider the range of the participants in a given expenditure, the greater the surplus. Artistic and beautiful, even if expensive, things are indeed desirable ; but to accomplish the greatest economic as well as ethical good, their enjoyment should not be monopolized by the few. In classic Greece the choicest sculptures and paintings were displayed in the streets and temples ; and even in modern times the public galleries are assuming continually greater dimensions. Where the principle of the public trusteeship of private wealth has permeated the community we find, as in a few of the European cities, that the private galleries are so only in name, and that they are periodically, if not continuously, thrown open to the public.

Thus the economic view of luxury does not really differ from the ethical. From the moral point of view the self-indulgent luxury of the mere sensualist is always to be deprecated : a private Mæcenas is relatively defensible ; but a public Mæcenas is still more admirable. From the economic point of view, the test is the importance to society of the luxurious outlay. The luxury of a mere *fainéant* is always an economic loss ; the luxury of the individual who has honestly acquired his wealth, who has been spurred on to activity by the thought of the ultimate reward, and who has succeeded by serving the community is relatively defensible ; but public luxury or the luxury of the same individual when he devotes his wealth to public purposes is a more distinct economic gain, because with the same outlay of effort there is now a greater enjoyment, and thus a greater surplus of utility. In both public and private expenditure, however, great care must be exercised not to carry luxury to an extreme. Ethically the danger is that the æsthetic element may be engulfed in sensuality ; economically the

danger is that the surplus or the wealth of the community may be whittled down by increasing consumption at the expense of production.

229. The Facts of Poverty.

Poverty, like luxury, is a matter of degree. Yet from one point of view we may contrast absolute with relative poverty. Absolute poverty may be defined as that condition where the income is insufficient for the bare minimum necessary to maintain physical efficiency. Relative poverty, on the other hand, would be the inability to maintain the standard of life which in civilized countries includes something more than mere subsistence.

Poverty depends on the relation of income to the cost of living. It is therefore a matter of considerable importance to determine on the one hand the income and on the other the extent and the elements of the cost of living. Unfortunately the material at our disposal is exceedingly inadequate, except as to the proportion of elements in expenditure.

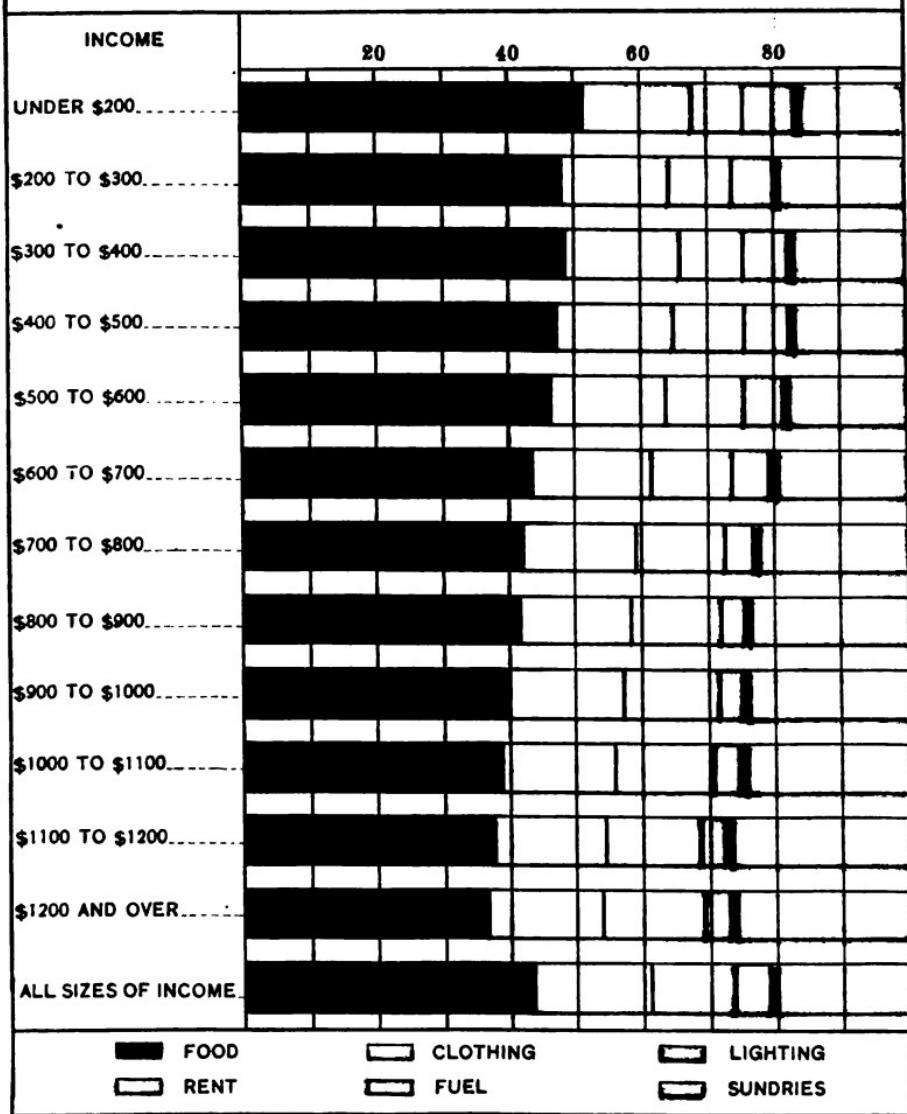
As to these the three fundamental expenses are, in their order of importance, the expense for food, shelter and clothing. Several decades ago, the German statistician, Engel, made some calculations as to the percentages of various items of expenditure. More recently the United States Bureau of Labor has conducted elaborate investigations. Taking several thousands of normal families classified according to their income, the bureau found the percentage of expenditures in 1901 to be as shown in the table on the opposite page.¹ The same facts are illustrated graphically in the chart opposite page 584.

These results in the main confirm those obtained by Dr. Engel, although there are some discrepancies. Dr. Engel's propositions were as follows:

(1) The greater the income, the smaller the percentage of

¹ United States Bureau of Labor, *Eighteenth Annual Report, Cost of Living and Retail Prices of Food*, 1904, p. 101.

PER CENT OF TOTAL EXPENDITURE MADE FOR VARIOUS PURPOSES IN
NORMAL FAMILIES IN THE UNITED STATES, 1901. BY SIZE OF INCOME.



From Bulletin of U.S. Bureau of Labor, No. 54 (1904).₁

outlay for subsistence. This is confirmed by the American investigation.

(2) The percentage of outlay for clothing is approximately the same, whatever the income. This is not confirmed in America, where the highest class spends relatively twice as much as the lowest class.

(3) The percentage for lodging or rent and for fuel and lighting is approximately the same whatever the income. In

Classified Income.	Rent.	Fuel.	Lighting.	Food.	Clothing.	Sundries.	Total.
Under \$200	16.93	6.69	1.27	50.85	8.68	15.58	100
\$200-\$300	18.02	6.09	1.13	47.33	8.66	18.77	100
\$300-\$400	18.61	5.97	1.14	48.09	10.02	16.09	100
\$400-\$500	18.57	5.54	1.12	46.88	11.39	16.50	100
\$500-\$600	18.43	5.09	1.12	46.16	11.98	17.22	100
\$600-\$700	18.48	4.65	1.12	43.48	12.88	19.39	100
\$700-\$800	18.17	4.14	1.12	41.44	13.50	21.63	100
\$800-\$900	17.07	3.87	1.10	41.37	13.57	23.02	100
\$900-\$1000	17.58	3.85	1.11	39.90	14.35	23.21	100
\$1000-\$1100	17.53	3.77	1.16	38.79	15.06	23.69	100
\$1100-\$1200	16.59	3.63	1.08	37.68	14.89	26.13	100
\$1200 or over	17.40	3.85	1.18	36.45	15.72	25.40	100
Total	100	100	100	100	100	100	100

America this is the case as to rent, but not as to fuel, the relative expenditures for which decrease as income increases, perhaps because of better clothing, perhaps because heating of large buildings is more economical than in the case of small houses.

(4) As income increases in amount, the percentage of outlay for sundries becomes greater. This is confirmed.

The American investigation also sought to ascertain the variations in expenditure according to the size of the family, and the result is shown in the following table of percentages for a large number of families with an income of from \$600 to \$700 :

Object of Expenditure.	No Children.	One Child.	Two Children.	Three Children.	Four Children.	Five Children.	All Families.
Rent	20.20	18.88	17.88	17.93	17.97	17.04	18.48
Fuel	4.75	4.69	4.60	4.58	4.79	4.49	4.65
Lighting	1.18	1.13	1.16	1.02	1.09	.98	1.12
Clothing	12.44	12.81	12.82	12.85	13.45	13.90	12.88
Sundries	21.30	20.58	19.95	18.69	15.50	14.97	19.39
Food	40.08	41.91	43.59	44.93	47.20	48.62	43.48
Total	100	100	100	100	100	100	100

The percentages of combined expenditure for 2,567 families selected for detailed investigation were as follows:

Food	42.54	Tobacco	1.42
Clothing	14.04	Labor and other Organization Fees	1.17
Rent	12.95	Books and Papers	1.09
Fuel	4.19	Lighting	1.06
Furniture	3.42	Religious Purposes . . . . .	.99
Insurance	2.73	Taxes . . . . .	.75
Sickness and Death	2.67	Charity . . . . .	.31
Liquor	1.62	Other Purposes	5.87
Amusements and Vacation	1.60	Total	100
Mortgages on Home	1.58		

When, in lieu of taking percentages, we seek to ascertain the actual minimum of necessary expenditure for each purpose, exact figures are unfortunately lacking. The chief scientific results are confined to the item of food, and are due to the investigations of Professor Atwater, published by the United States Department of Agriculture. The quantity of food required is nowadays put in terms of protein (the chief nutritive ingredient of food) and potential energy (in the form of heat and muscular strength yielded by food). Potential energy is usually expressed in heat units or "calories," a calorie being the amount of heat needed to raise a gram of water one degree Centigrade. On this basis Atwater has cal-

culated that, according to the muscular work accomplished, from 100 to 150 grams of protein, yielding 2,700–4,500 calories, are needed daily. Men doing average moderate work in a temperate climate require 3,500 calories, and women eight-tenths of this amount. Detailed studies have also been made as to the nutritive and economic qualities of various kinds of food and the relation of nutrition to waste, careful attention to which would enable far better results to be attained by the same outlay as at present. The American workman especially would gain much by utilizing these interesting results.

The principal application of such considerations to the statistics of poverty has been made by Rowntree in his remarkable study of conditions in the English town of York. According to his calculations, the minimum necessary expenditure for a husband and wife with three children is 21*s.* 8*d.*, or about \$5.25 a week. On this basis, and making allowance for families of different sizes, he arrived at the startling conclusion that almost twenty-eight per cent of the total population were living in poverty,—that is, in receipt of an income insufficient for the maintenance of mere physical efficiency. This was a striking and unexpected confirmation of the conclusions by Booth in his magnificent study of economic and social conditions in London, that thirty per cent of the London population lived in poverty, below the necessary minimum.

The unfortunate individuals within the poverty line are wretchedly housed, inadequately clothed and underfed. The results show themselves directly in the far higher average death rate, the greatly increased infant mortality, and the marked inferiority in height, weight and general physical condition. Of the indirect influences on industrial efficiency, on national character and on moral development it is not necessary to speak.

The conditions in London and York may be taken as fairly typical of those in modern British industrial towns. Similar data for the United States are completely lacking, and nothing but wild guesses, devoid of scientific value, have been made.

All that we have are more or less fragmentary statistics of actual paupers or direct recipients of charity, so that an almost virgin field discloses itself to the attention of the statistician and scientific investigator. No one, however, who is conversant with social conditions in our large cities can doubt that if in prosperous England over a quarter of the urban population is below the poverty line, and another large part scarcely above it, the situation is not fundamentally different in the industrial portions of America. It is true that only one-third of the population live in cities as against two-thirds in England, and it is indisputable that the American standard of life is higher. But whether it is thirty per cent or only fifteen per cent of the American urban population that is submerged below the poverty line, the fact that in our much vaunted modern civilization there should be millions of human beings who do not possess an income adequate for bare physical efficiency is sufficiently appalling.

230. The Causes of Poverty.

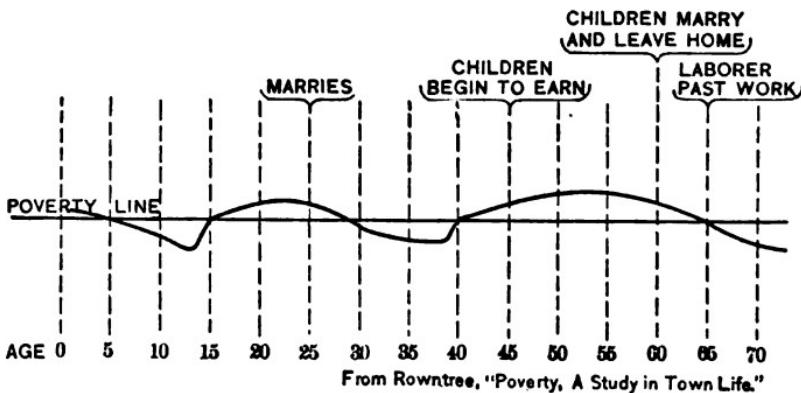
The causes of poverty are sometimes classified as individual and social, or the result of misconduct or of misfortune. In the first category are put such phenomena as intemperance, habitual indolence, sensuality, gambling, ignorance, shiftlessness and improvidence. This classification, however, is erroneous for a double reason.

In the first place, very little permanent poverty can be ascribed to any or all of these so-called individual causes alone. They are almost without exception found in conjunction with some of the so-called social causes, and it is virtually impossible to segregate them and to estimate their relative importance separately or as a group. Secondly, the distinction between individual and social causes has been much weakened by natural science as well as by economics and sociology. Many of the so-called personal traits, for instance, have been shown to be the result of heredity, as in the famous families of the Jukes and the Ishmaels, every member of which to the number of several hundreds was infected by the family taint.

Still more important, however, is the fact that the personal and non-hereditary characteristics of the individual are in large measure the result of his environment. It is a familiar fact that individual ethics are modified by social ethics; it is not always appreciated that intemperance, vice, ignorance and improvidence are to a very great extent the consequence of economic and social surroundings. If it be said that intemperance produces poverty, it may equally well be said that poverty breeds intemperance. What could be more startling than the well-authenticated fact that in many cities a large percentage of the unfortunate women whom we associate with the term social evil are reduced to ply their vocation by poverty alone? It is indeed true that no matter how ideal the general economic conditions may be, there will always be some individuals who will sink to the bottom; and it is this to which the Bible no doubt refers when it tells us, "The poor always ye have with you." But to suppose, as some of the prosperous and cynical well-to-do are wont to assume, that this kind of poverty forms any conspicuous part of the whole is preposterous in the extreme.

A better classification is that into immediate and ultimate causes of poverty. In Rowntree's careful investigation it was found that where the family earnings (all of them expended on the bare necessities of life, and not including other useful or wasteful expense) were insufficient for mere physical efficiency, the immediate causes were as follows: death of chief wage-earner, 15.63 per cent; illness or old age of chief wage-earner, 5.11 per cent; irregularity of work, 5.14 per cent; size of family, 22.16 per cent; regular but insufficient wages, 51.96 per cent. So far as the size of the family is concerned, the poverty line was constructed on the basis of a family of three children. Had a larger family been selected as the average, the numbers living in poverty would naturally have been correspondingly increased. But while a larger family would involve a condition of greater poverty, it is interesting to note that this means not continuous poverty, but alternating periods

of dire want and comparative comfort. The life of the ordinary unskilled workman may be divided into several periods. During childhood he will be apt to live in poverty until he as well as his brothers and sisters begin to contribute to the family income. He will then be in a position to save and may continue to do so after marriage. When, however, more than two or three children arrive, he will again fall below the poverty line and remain there until most of the children are old enough to earn something. Then commences the second period of less acute privation which continues until the children marry and leave him in old age, when he for the third time falls below the poverty line. This situation can be illustrated in the following diagram :



The startling fact, however, is that, even with an average family and regular work, over one-half of those living in poverty at any moment are reduced to that state simply because, notwithstanding the exercise of thrift, sobriety and care, the income is inadequate for support.

When we ask what is the ultimate cause of poverty, it is at once obvious that no single reason can be separated from the others. Modern poverty is bound up with the facts of modern economic life, and modern economic life is a complex product. To select any characteristic feature of the present industrial system and to single it out as responsible for poverty is naïve,

but worthless. The Malthusian seizes upon redundant population, the communist upon private property, the socialist upon property in means of production, the single taxer upon property in land, the co-operator upon competition, the anarchist upon government, the anti-optionist upon speculation, the currency reformer upon metallic money, and so on. They all forget that widespread poverty has existed in the absence of each one of these alleged causes. Density of population, private property, competition, government, speculation, and money have each been absent at various stages of history without exempting society from the curse of poverty. Each stage has had a poverty of its own.

Nothing is more natural, but nothing is more fraught with danger, than to cast a halo over the past and to make of it a golden age. The poverty of to-day is sad and even heart-rending, but to the student of economic history it is clear that in the older industrial countries at least, where alone a fair comparison can be made, the poverty of to-day is less than it was a century ago, and far different from what it was in former ages. Even the socialists are now abandoning their contention as to the gradual pauperization of the mass of society, and are restricting themselves to the complaint that the workman is not securing a fair share of the undoubted increase of wealth. Moreover, at the present time there is bitter poverty in India, a country without the modern industrial system; and still more acute destitution among savages who are ignorant of property in land. The causes of poverty are as complex as the causes of civilization and the growth of wealth itself.

231. Relief of Poverty.

All remedies for poverty fall into one of two classes,—the palliative and the curative,—the endeavor to relieve poverty and the attempt to prevent poverty. The distinguishing feature of modern life is the growth of a public sentiment which seeks to cope with the evils of poverty from both points of view.

The relief of poverty has taken the forms of private and

public relief. Private charity, again, has been either individual or institutional. We thus have the three classes of individual relief, private institutional relief and public relief.

(1) Individual charity, while incontrovertibly of great weight in special cases, is often likely to be of ethical importance to the bestower rather than of economic benefit to the recipient. Experience has shown that indiscriminate personal charity is frequently ill-advised, because it is the result only of the heart rather than of heart and head combined. The consequence is that it is just as likely to perpetuate as to relieve beggary and pauperism. The realization of this fact has led to the replacement, or at all events to the supplementing, of personal by institutional relief.

(2) Institutional private relief is exemplified by the charitable agencies like benevolent societies, relief and aid societies, associations for improving the condition of the poor, fatherless and widows' societies, and societies for promoting frugality and repressing mendicancy. Above all, however, we must signalize the charity organization societies which have been rapidly developing during the last half-century. These are endeavoring to substitute scientific principle for hap-hazard action, and have done not a little to direct the stream of generosity into the right channels. Pauperism, however, either brings in its train or aggravates many other distressing evils such as the various forms of disease, unsanitary homes, dependent children, and liability to economic and legal exploitation. Numberless, therefore, are the modern institutions like private hospitals, dispensaries, sanatoria, anti-tuberculosis leagues, improved dwellings and model lodging-house companies, orphan asylums, crèches, kindergartens, juvenile homes, fresh air funds, retreats for the aged, the convalescent and the incurable, provident loan societies, employment agencies, wood-yards and laundries, industrial colonies, legal aid societies, peoples' palaces and the like. Bewildering in their complexity, the proper management of these philanthropic agencies has become a distinct profession and the subject of a separate discipline, with a stupendous literature of its own.

In former times institutional philanthropy was to a large extent religious in character. All the great religions of the world have inculcated the virtue of benevolence, and not the least contribution of Christianity consisted in the new spirit of universal brotherhood and charity which it infused into the pagan European world. During the major portion of the middle ages, in fact, the charities of the church were virtually the sole embodiments of organized philanthropic activity. It was only after the Reformation, when the property of the church and of many of the religious orders was "secularized," that the need of some form of public relief was recognized.

(3) The most important illustration of public relief is that known as the Poor Law System. In England, after the confiscation of the guilds and chantries during the sixteenth century, the bishops were admonished to exhort their parishioners to more liberal gifts for the poor. As these exhortations gradually lost their efficacy, it was finally provided that in case of contumacy the justices of the peace might order an assessment. Thus did the voluntary contributions gradually change into compulsory payments,—a process which may be observed in the history of all taxation. In 1601 a general assessment was levied for the support of the able-bodied and impotent poor. In 1662 the settlement act was passed, designed on the one hand to increase the facility of relief, but on the other to limit it strictly to native inhabitants of the locality. The act of 1722 authorized the building of workhouses, and the withholding of relief from those that refused to enter. Gilbert's act of 1782 directed the local authorities to find for the unemployed poor work suitable to their requirements and in the proximity of their homes. The system reached its climax in the act of 1796, when Parliament followed a similar resolution of some justices of the peace who had assembled at Speenhamland in the preceding year and authorized outdoor relief for the necessitous as a substitute for the now discredited workhouse test.

It was at one time the custom to ascribe a disproportionate

influence to the poor law. The English system was undeniably a direct premium on improvident marriage and lack of frugality. But the oft repeated assertion that it impoverished the comfortable and perpetuated the miserable is clearly an exaggeration. The situation at the close of the eighteenth and beginning of the nineteenth centuries was indeed deplorable; but, as we know, it was very largely the result of the abuses connected with the transition from the domestic to the factory system. The poor law played its part, but after all a relatively inconspicuous part, in maintaining the degradation of the working classes. In the same way the great reform of the poor law in 1834, by which outdoor relief was abolished, was only one of the many ameliorative movements which revolutionized the condition of the laborers in the second quarter of the century, such as the abolition of the conspiracy acts, the passage of the factory laws, the repeal of the corn laws, the reform of taxation, and the growth of democracy. The old poor law did not create English poverty, and the new poor law did not abolish it.

In the United States, where pauperism has been for obvious reasons less acute, the two salient features of the poor-law systems have been the almshouse and outdoor relief. Public outdoor relief, however, has been substantially abolished in some of the larger Eastern cities, like New York, Philadelphia, Baltimore and Washington, with distinctly good results. A consideration of the relative merits of public and private relief, which is becoming the subject of warm discussion in many parts of the United States, would however lead us too far astray; for the controlling considerations are not primarily economic in character.

232. Prevention of Poverty.

We have seen that there is no single cause of poverty; there can accordingly be no single preventive of poverty. The naïve and simple remedies that are commonly advanced may be re-

duced in their practical operation to two, — a diminution of population and a diminution of wealth.

After the discussion in Chapter IV. the suggestion that poverty can be abolished by checking population scarcely needs any further comment. Human beings are producers as well as consumers, and under proper conditions an increase of population may be entirely compatible with an increase of general wealth. Nothing is more indisputable than that numbers have increased and relative poverty has decreased in many modern countries.

(The diminution of wealth, on the other hand, is in itself never advanced as a remedy, for that would be too obviously absurd. But all the other naïve remedies for poverty are practically tantamount to this.) To the attentive reader of the preceding chapters it should be abundantly clear that private property and individual initiative have been the motor forces of the accumulation of wealth and the real progress of humanity.) Anything therefore which seriously saps these foundations necessarily undermines not only the whole structure of industrial society but the edifice of civilization itself. Anarchism would abolish government, but in so doing would rob society of the fundamental protection which enables it to exist in peace. Communism would level distinctions of wealth, but in eliminating private property would destroy progress. (The restriction of large fortunes by taxation, by direct prohibition or by limitation of bequest would seriously impair the spirit of enterprise.) Socialism, which would abolish private control of production, would in the present condition of the human race necessarily diminish production. Socialism is virtually co-operation; and the true co-operative spirit is wofully lacking in the mass of mankind.) There are indeed conspicuous examples of wealthy socialists, but they have been for the most part men of lofty idealism who would have played an equally prominent part in the reform rather than the reconstruction of modern industry. If the rank and file of men were ethically as advanced as are many of the socialist leaders, there would be no need of reform.

Socialism assumes that mankind is ready for the self-abnegation implied in the very idea of the public and co-operative activity which is to include the whole of productive enterprise. History and psychology alike teach us that this grossly underrates the importance of the economic motive. When the world is ready for socialism, socialism will be unnecessary. In the mean time any serious encroachment of socialism would inevitably bring with it a slackening in the pace of accumulation ; and in the long run a diminution of wealth cannot mean a diminution of poverty.

To say, however, that poverty has always existed is no reason for believing that it should continue forever to exist. Absolute equality of conditions is indeed an iridescent dream, for it runs counter to the inequality or differentiation which is the law of all life and the explanation of all change. But if the preceding discussions in this volume have emphasized any one point it is the fact of the progressive intermingling of the individual and social points of view,—the interpenetration, as it were, of the individual by the claims of society, and on the other hand the infusion into the collective activity of some of the surplus energy which must always continue to find its tap-root in the efforts of the individual. Translated into economic terms, this means that the modern industrial system is slowly producing not only political democracy but economic democracy, and that economic democracy is incompatible with permanent and widespread poverty.

This does not imply that economic forces alone and directly are creating a millennium, or that the political ideal is *laissez-faire*. Government and the public sentiment behind it are in a sense the outgrowth of the economic situation ; but, as we have learned, they are also potent factors in modifying the situation. Economic, political and ethical forces are conspiring to bring about progress by raising the social level. In ordinary business life this means the gradual but clearly discernible elevation of the standard of commercial morality. So far as poverty is concerned it means the lifting of the standard of life

of the laborer and the setting, in ideal at least, of an irreducible minimum, below which national production is not worth having. Practically this process assumes the varied forms of trades-union activity, of education of the unskilled, of factory legislation, of labor insurance, of employers' liability, of improved housing, of trade agreements, of control of monopoly and of all the other modern agencies of social reform. The process is a slow one, because it is an arduous task to make the successful and self-satisfied business man realize that the true ultimate interests of his class are associated with the increased consumption that can come only from the higher standard of life of the mass of the producers. It is in the last instance public opinion alone which in a democracy can protect the well-intentioned and long-sighted employer from the unfair competition of his unscrupulous and selfish rivals.

The way, therefore, to have progress without poverty is not to level down but to level up ; to do nothing which will prevent the capable, the resourceful and the daring from exerting their skill and inventive ingenuity ; but, on the other hand, to keep open the door of opportunity for all and to throw about the mass of the less fortunate and the less gifted the protecting mantle of a public sentiment which will be intolerant of injustice, and which will insist upon the creation of conditions that insure to every worthy human being at least the possibility of a worthy human existence.

233. The Future of Economic Life.

We come finally to the questions which at the close of such a study as this inevitably force themselves upon us : Whither are we tending ? What lessons have an economic interpretation of the past and of the present to teach us in our guidance for the future ? What are the forces that are making for progress or retrogression ?

There is no blinking the fact that many give a pessimistic answer to these queries : they call attention to the increase of luxury and materialism ; they look with suspicion upon what

they term the growing plutocracy and the new feudalism; they point to the warning example of the oriental monarchies, of classic Greece and Rome, and tell us that in our case, too, the period of prosperity which is now upon us will be followed by one of decay and final dissolution. What has been will be: there is nothing new in human affairs.

Yet a discriminating study of the considerations set forth in this volume should preserve us from so gloomy and despondent an attitude. The three factors of importance to which all that has preceded may be reduced are: the growth of industrial capital, the internationalism of science, and the emergence of the democratic ideal.

(1) In ancient Rome, as in feudal Europe and colonial America, the conditions of landholding played a dominant rôle. The control of the trade routes was the chief factor in the rise and fall of the oriental monarchies, of the Greek city states, of the Italian and German towns, of Portugal and Spain. The distinguishing mark of modern times, on the other hand, is the existence of industrial capital. We speak glibly of the recent progress of science, but few realize the true import of this growing subjection of nature to man, and of the revolutionary character of this harnessing of the powers of the universe to the yoke of the human intellect. For one thing, it has made possible an almost limitless increase in production. Landed capital, under the unscientific methods of the past, was able to go so far and no farther. The advent of commercial capital indeed increased prosperity, and to the extent that exchange is really a phase of production, augmented the productive power of the world. But here, again, its efficacy was confined within narrow bounds. Creating new values simply by the bartering of existing values, the pyramid of wealth rested on the basis of the actual production within each community, and could not be piled up beyond a certain height. But with modern industrial capital and the snatching from nature of her intimate secrets, the utilization of natural resources within each country has become almost boundless,

and provides an ever-broadening base for the benefits of trade and commerce.

It is for this reason alone that the history of the world in the future is to be so different from the past. In former times, after a certain point had been reached in agriculture and commerce, human ingenuity was powerless to do more than divide existing wealth ; and with this fixed limit to production, it is no wonder that each civilization in turn should have attempted to secure the prize for itself. Hence the rise, the glory and the decline of nations. In future, however, in lieu of dividing existing wealth, each nation which lives up to its opportunities will be able to create new wealth. Important as will continue to be the land question and the trade relations, the secret of ultimate success is to be sought in the fundamental conditions of industrial enterprise at home ; and with the growth and control of industrial capital there need be no limit to the continuous march of wealth and progress.

(2) Science is not only boundless in its possibilities, but impartial in its activities. Science transcends all national lines. Never again will a country be able to achieve or to retain a monopoly of industrial advantages. For the time being, indeed, climatic conditions or racial characteristics may give one nation a temporary preponderance in some particular category of production ; but with the overwhelming importance of new industrial methods, applicable impartially to all natural forces, the advantage cannot be permanently retained.

We are accustomed to speak of the changes brought about by the alteration in the media of transportation and the growth of the world market ; we do not yet realize the full implications of the industrial revolution. Rightly conceived, it means the coming internationalism of mighty empires in friendly competition with each other, not for the division of what exists, but for the utilization of what can be made to exist. For the immediate future, indeed, while nations are still in unequally developed stages of industrial growth, and while there remain extended markets not yet on the highroad to industrial pre-

dominance, there will still be some room for the nationalism of the old type with its protective features and its commercial rivalries. In these contests we must undoubtedly take our part. But with every decade's progress in science the conditions will change, and the old nationalism of exclusiveness will melt into the new cosmopolitanism based upon the continual progress of each great and economically homogeneous community.

(3) The final point of difference — the flower and fruit of all its forerunners — is the existence of the democratic ideal. We point, indeed, with complacency to the advance made by the skilled members of the working class, but to those who realize the essential conditions of successful democracy, where the mass of citizens are necessarily the laborers, the ideal to be attained advances still more rapidly than the actual progress. The brutish, lethargic peasant of the old world is, perhaps, content with his crust and his misery. The free citizen of the modern industrial state wants, and wants justly, to participate in the spiritual as well as the material benefits of modern civilization. With every advance in his economic position, due to the interplay of modern industrial forces, new vistas of possibilities disclose themselves, new sources of legitimate satisfaction make their appearance. (The social unrest of to-day, with all its disquieting and regrettable incidents, is on the whole a salutary symptom.) It is but the labor pains in the birth of the new industrial order which has been in the making for the past few generations, and of which the faint outlines are even now discernible.

This new industrial order depends, however, on the emergence of a healthy public opinion. In antiquity political and social opinion was a class opinion. In the middle ages the incoherent public opinion was intolerant to competition. In modern times the progress of economic thought and the pressure of economic fact in uplifting the hitherto submerged classes of the community are generating a public opinion which frankly recognizes the benefits of a healthy competition, but which

insists more and more on an effective social control of competition to the end that it be elevated and purified. ✓

A study of the economic forces now at work therefore justifies a reasonable hopefulness. The productive powers of society are augmenting at such a prodigious rate that we need no longer apprehend a decay of general prosperity or of national power. There is to be no further irruption of the barbarian, because there will soon be no more barbarians. There is to be no swinging back of the pendulum of civilization, because under the influence of the new economic forces only those nations can succeed that understand how to utilize industrial capital ; and this comprehension implies an ever-ascending stage of civilization. There is to be no domination of each people in turn over all the others, because of the internationalism of science and the impartial territorial diffusion of industrial agencies. And within each nation, while the rich are undoubtedly getting richer and while poverty still stalks abroad, the poor are not getting poorer. The creation of a more equable, because a more complete, competition through the development of the system of collective bargaining and the more adequate supervision of monopoly ; the recognition on the part of the public that lasting prosperity depends not only on the conservation and free play of capital, but also on the gradual elevation of the laborer from a cheap man to a dear man ; the coming social control of competition itself in the interests of a more enlightened and hence really freer rivalry, — all these will inevitably tend to secure to each class in the community its proper share in the national dividend. ↴

234. The Rôle of Economics.

Economics, then, has a progressively important rôle to play in the future. We thus come at the end to the position from which we started out. With the commanding significance of the economic life in its influence on social progress, economics, in pointing out exactly what is, must necessarily concern itself with what ought to be. If the economic student is the

✓ real philosopher of social life, he will take a more notable part in future speculation and future legislation. The various social classes, by reason of their very being, see only the particular, not the general interests. The farmer understands the workings of Wall Street, and the factory hand comprehends the condition of the world market, as little as the capitalist realizes the true ideals of the laborer. To let any one class act as spokesman for the other is pregnant with danger. The economic student, if he is worthy of his calling, will proceed without fear or favor; he will be tabooed as a socialist by some, as a minion of capital by others, as a dreamer by more. But if he preserves his clearness of vision, his openness of mind, his devotion to truth and his sanity of judgment, the deference paid to his views, which is even now beginning to be apparent, will become more and more pronounced. The influence of economic conditions on economic theory has been, let us hope, abundantly demonstrated; but the reciprocal influence of economic thought on actual conditions is in danger of being overlooked. As the science itself becomes more and more complete, it will be in a better position to apprehend and to explain the real content of existing conditions and the true method of making the actual conform to the ideal. Economics, which is to-day only in its infancy, and which is of all disciplines perhaps the most difficult and the most complicated, is indeed interlaced with and founded upon the actual conditions of the time; but like natural science the economics of the future will enable us to comprehend the living forces at work, and by so doing will put us in a position to control them and to mould them to ever higher uses. Economics is therefore both the creature and the creator. It is the creature of the past; it is the creator of the future. Correctly conceived, adequately outlined, fearlessly developed, it is the prop of ethical upbuilding, it is the basis of social progress.

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